# THE SCHOLASTIC THEORY

OF THE

# SPECIES SENSIBILIS

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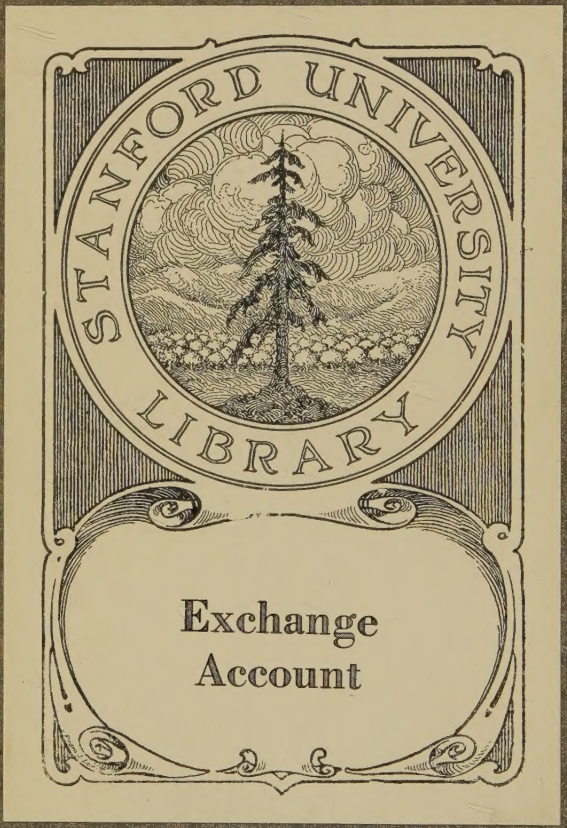


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DEDICATION.

*To my esteemed teachers*

DR. TURNER, DR. PACE, AND DR. FOX.

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# THE SCHOLASTIC THEORY

OF THE

# *SPECIES SENSIBILIS.*

## Introduction.

Contemporary philosophy is interested in the theory of knowledge more than in any other branch of speculative thought. Before we philosophize we are asked to demonstrate the possibility of knowledge, and in order to do this, we must determine the nature of knowledge. But "to define knowledge apart from the process by which it is acquired, is impossible."[1] Hence we must go back one more step and investigate the origin of knowledge.

This critical attitude towards philosophy was inaugurated by Kant, who attempted to reconstruct the conditions of knowledge. From his day to our own the bulk of speculative thought has centered around epistemology, so much so that some philosophers would even discredit all other metaphysical speculation.

The philosophers of old were not so intensely critical. For them the possibility of knowledge was an hypothesis, not a thesis; the objective truthfulness of our knowledge was taken for granted, not proved. There was, however, one problem of epistemology which troubled philosophers even before the time of Aristotle, namely, the problem of sensation. All knowledge, argued these thinkers of old, implies a union of some kind between the knower and the thing known. But in sight, for instance, the object is not in immediate contact with the eye; in fact, we can see only those objects which are a distance from us. What is more, we see these objects as existing, not within the eye, but outside of ourselves. How, then, is the necessary union between subject and object established? Does the eye go out to the object?—this was probably the most

[1] Walker, Theories of Knowledge, p. 375.

primitive solution—or, does the object enter the eye? This second alternative was the basis of the earliest systematic theory of sensation, formulated by Democritus.

As an atomist, Democritus maintains that the whole universe is material, that all matter is composed of atoms, and that all movement is the result of material contact. Sensation, then, as well as thought, must be a corporeal phenomenon, must be the action of body upon body. Τὰς αἰσθήσεις καὶ τὰς νοήσεις ἑτερώσεις εἶναι τοῦ σώματος.[2]

Hence he maintains that sensation is effected by the emanation of atoms from the object which form an εἴδωλον or image of the object in the contiguous air.[3] This εἴδωλον is a material shell, film, or cast given off from the surface of the object.[4] The air, being made dense by the sun, is stamped with this εἴδωλον and conveys it to the eye.[5] But the air, as well as the eye, modifies the image.[6] Thus modified, it passes to the soul through the body, and produces in the soul (which is but a finer matter similar to fire) a qualitative change.[7] The same is true for all the senses; they are struck by εἴδωλα or emanations of atoms which, by passing through the organ, come in contact with the soul.[8] Although the εἴδωλα strike our whole body, we see with our eyes and hear with our ears because the organs of sense are freer passageways to the soul.[9]

As long as men accepted materialistic monism, this solution of Democritus might satisfy them; but with the advent of dualism, new difficulties arose concerning sensation. If the mind or spirit is a substance wholly different from, if not indeed directly opposed to matter, how can a material object become united to a spiritual subject?

[2] Diels, Vorsokr., I, p. 348.
[3] Ibid.
[4] Ibid.
[5] Op. cit., p. 374.
[6] Op. cit., 373.
[7] Op. cit., p. 370.
[8] Op. cit., p. 374.
[9] Op. cit., p. 375.

Again there could be but two solutions: either the subject goes out to the object, as Plato holds; or the object comes to the subject, as Aristotle maintains.

Plato developes a system of idealism. Mind is all-important; matter is "nearly nothing." Space and movement are real, but the objects moving in space are only phenomena,[10] that is, they belong to "the region of change and multiplicity and imperfection and, therefore, of partial not-Being."[11] But the object of true knowledge is the universal, the idea. "The Idea is the element of reality in things—the one uniform immutable element, unaffected by multiplicity, change, and partial not-Being."[12] Ideas, moreover, are innate. These metaphysical principles lead Plato to underestimate sensation which deals merely with what is phenomenal. What is more, sensation positively disturbs the ceaseless activity of the soul.[13]

But the fact remains; we know objects of sense. How, then, can we account for this phenomenon? Plato says, since the body is material and, therefore, phenomenal, it can be influenced by external objects. This influence from without is conveyed to the soul through the body, *i.e.*, we have sensation.[14] Impressions on the body arise from movement.[15] Various movements affect the body differently, hence the different qualities of sensation.[16] The quantity of sensation is determined by the strength of the impression and by the fineness of the sense-organ.[17]

How this movement comes in contact with the organ of sense, Plato explains only in the case of sight, which he describes as the result of a ray of light going out from the eye, meeting the light without, and thus forming a

[10] Timaeus, 53.
[11] Turner, Hist. of Philos., p. 106.
[12] Turner, op. cit., p. 100.
[13] Tim., 43.
[14] Tim., 43.
[15] Tim., 66.
[16] Phileb., 33.
[17] Tim., 75.

stream of light. When an object comes in contact with this stream, it gives to the latter a specific motion which then is carried to the sense-organ. From the organ it is conveyed to the soul by the movement of contiguous particles.[18]

The soul is not affected or changed by these impressions from without; but in the affection of the body, the soul perceives the object of sensation.[19] Neither does the influence of the object determine the soul, as the soul is ceaseless activity and, hence, determines itself.[20]

Aristotle was not satisfied with either of the above theories of sensation. Democritus' theory he rejected, because "it is absurd to say with the ancients that colors are effluxes and for this reason are visible. For, in their opinion it is absolutely necessary that sensation be effected through contact; it is consequently better to say at once that the medium of sensation is set in motion by the sensible object, and that in this way sensation is produced by contact and not by effluxes."[21]

The Platonic theory of sensation was equally unsatisfactory to Aristotle, according to whom ideas are not innate, but have an existence in the objective world. Our knowledge of them must consequently be based on sensation, *i.e.*, sensation furnishes the material out of which the intellect forms its ideas. "Thought is impossible without an image . . . an image is the product of sensation."[22] Led by these convictions, Aristotle treats of sensation with surprising completeness. Siebeck thinks that the theory of sensation is not only the most thorough treatise of Aristotle's psychology, but that it likewise shows the greatest advance over earlier philosophy.[23]

Three metaphysical concepts are fundamental in the

[18] Tim., 45.
[19] Tim., 45.
[20] Tim., 43.
[21] De Sens., III, 15.
[22] De Mem., I.
[23] Gesch. d. Psychol., I², p. 21.

theory of sensation as presented by the Stagirite; namely, the substantial unity of body and soul, matter and form, and actuality and potentiality. If any one of these be rejected, his theory of sensation will fall; but if all three are accepted and understood, his theory of sensation will be both intelligible and satisfactory.

Sensation, Aristotle goes on to explain, arises from the action of the object on the subject.[24] The object of sensation is the material universe;[25] the subject is neither the body nor the soul separately, but the two united as one substance. "Sensation in its actual sense is a psychical process mediated by the body."[26] The influence of the object Aristotle explains thus: the sense qualities, *e.g.*, color, sound, and odor, are kinds of motion (κινήσεις).[27] The objects in which these qualities inhere, communicate them "to a certain part of the atmosphere, and this in turn sets another part in motion."[28] Thus "the sense-organ is stimulated by the contiguous medium."[29] Simultaneously with this stimulation the dormant, potential faculty of sense becomes actual and perceives the object. "The actualization of the object of sense and of the sense itself is one and the same process; they are not however identical with each other in their essential nature."[30] It follows, then, that the sense is *representative* what the object of sense is *entitative*.

However, "the mode of expression of the perceptive faculty and of sensation is not magnitude, but only a certain relation and potentiality of magnitude."[31] How, then, can sensation be caused by material things which are magnitude? "A sense is capable of receiving into itself sensible forms without their matter, just as wax

[24] De An., II, 5.
[25] De An., I, 4.
[26] De Som., I, 5.
[27] De An., II, 2.
[28] De Insomn., II.
[29] De An., II, 7.
[30] De An., III, 2.
[31] De An., II, 12.

receives into itself the mark of à ring without its iron or gold; . . . it receives into itself a gold or bronze impression, but not as gold or bronze. In like manner also sense is impressed by every object that possesses color or flavor or sound, not in so far as each of these objects bears a given name, but in so far as it has such and such a quality and expresses an idea. The organ of sense is fundamentally that in which this power of being impressed exists. It has, therefore, an identity with the object that makes the impression, but in its mode of expression it is different."[32] The subject becomes identical, not with the thing perceived, but with its form. "It is not the stone which is in the soul, but the form of the stone."[33]

Here we have the most characteristic feature of Aristotle's theory of sensation: material objects act upon the sense in virtue of their form (τύπος, εἶδος). Thus the chasm between mind and matter is bridged over more satisfactorily than by any previous theory. Idealism is avoided—the objects really cause sensation; materialism is avoided—sense is informed by the form, not by the matter, of the object.

Siebeck says of this theory: "In der Geschichte der Wissenschaften gehört die Sinnesphysiologie des Aristoteles zu den bedeutendsten Erscheinungen und ist wie weniges epochemachend. Was an ihr im Vergleich mit der heutigen unzulänglich ist, beruht fast ausschliesslich auf der Unbekanntschaft der Nerven-und Gehirnfunctionen. Das erkenntnisstheoretische Problem aber ist in derselben tiefer ergriffen, als es in der Regel heute auf diesem Gebiete geschieht."[34]

Aristotle was followed by a period of intellectual decadence when problems of philosophy were solved, not by thought and research, but upon the authority of earlier philosophers. Hence we need not record the theories of

[32] De An., II, 12.
[33] De An., III, 8.
[34] Op. cit., p. 39.

sensation which prevailed during that time. Lacking individuality and depth, they are so many copies or modifications of one or the other theory outlined above.

The Scholastic philosophers of the Middle Ages formulated the theory of the species sensibilis as an explanation of the problem of sensation. They claimed to have borrowed this from Aristotle. But in modern times it has been said over and again that they misinterpreted Aristotle and approached rather the theory of Democritus. For this reason, the theory of the species sensibilis is rejected *en masse* without investigation. Now it is quite possible, even likely, that some contemporary philosophers reject this doctrine of the Scholastics, as they do many others, not because it is known to be false, but because it is falsely known or not known at all. Except in rare cases, it is known only from secondary, if not from biased sources. But as Roger Bacon advises us: "Non possumus (eorum) philosophorum sententiam deprehendere, nisi ex libris eorum testimonia propria eruamus, ut sic vel errantes damnemus ex propriis verbis, vel excusatos a dentibus vulgi imperiti liberos extrahamus."[35] Hence a presentation of the historical development of the species-theory from the beginning of Scholasticism to St. Thomas, based on original sources, will not be out of place. Such is the purpose of this treatise.

The theory of the species sensibilis is not a physical or a physiological theory. As the opponents of medieval philosophy will readily concede, the Scholastics were inclined to speculation rather than to observation, to deduction rather than to induction. Starting, then, from the principle that in all knowledge the thing known is somehow in the knower, they were absorbed in the problem of sense-*knowledge*. How can a material object be in the sense which is a psychical faculty? How can a psychical faculty be excited to action by a material impression? It was not a question of what *does* take place and *how*, but

[35] Op. maj., (Bridges), p. 112.

what *must* take place and how *can* it. And the outcome of these inquiries was the theory of the species sensibilis. It is, then, truly a metaphysical theory, something over and above the physical—not the result of observation, but a postulate of reason. The naïve physical and physiological views with which some of the Scholastics surrounded the species-theory, are not a necessary part of it. They may be rejected—in fact, many of them have been rejected—without affecting the theory itself. Hence the present treatise will present the development of the metaphysics of the species-theory with only cursory references to the accompanying physical and physiological views.

Scholasticism is sometimes pictured as a closed, static system of thought, based in a large measure on authority, human and divine, with no development or evolution. There may be some ground for this accusation in the decadent Scholasticism of the fourteenth and fifteenth centuries. But herein Scholasticism is no exception. History attests the sad fact that all great intellectual geniuses have been unfortunate in so far that their ideas were not developed, sometimes not even fully understood, by their immediate successors; the pupil contented himself with restating the words of the master instead of extending their application.

Scholasticism in the period of its development before St. Thomas, presents another picture. The theory of the species sensibilis, for instance, in the eleventh century is so different from this same theory in the thirteenth century, that we should hesitate to apply to the former the name of species-theory, were it not suggested by the natural historical development. In fact, as we find three general views regarding sensation itself, the psychical, the materialistic, and the psycho-physical view; so, too, we find in the history of Scholasticism three aspects of the species sensibilis, the psychical, the materialistic, and the psycho-physical.

The psychical aspect of the species sensibilis, which is chronologically the first, is particularly noticeable in St. Augustine, Scotus Eriugena, and St. Anselm. These emphasize, more than do other Scholastics, the activity of the soul in the formation of the species, to the neglect of the influence from the external object.

Opposed to this view of the species is the materialistic aspect, according to which the species proceeds solely from the object, is material, indeed, is little more than the physical or chemical qualities that affect the organ of sense. The Arabians introduced the materialistic aspect of the species sensibilis, which is so evident in the School of Chartres, the School of St. Victor, Alfred of Sareshel, and others of the twelfth century.

Finally we see the psycho-physical aspect of the species sensibilis. This is a return to the original εἶδος-theory of Aristotle, modified to some extent both by the psychical and by the materialistic views which preceded it. The great Scholastics of the thirteenth century are exponents of this view.

From this historical presentation it will become clear that many objections, which have some weight if urged against the first or second aspect of the species sensibilis, lose all foundation if directed against the theory as defended by the great Scholastics of the thirteenth century.

It would, however, be both tedious and useless to present the application of the theory of the species sensibilis to each of the five senses. The problem of sensation is the same in one as in the others. Hence we shall be guided by the words of St. Augustine: "Sed et multum est, et non necessarium, ut omnes hos quinque sensus id quod quaerimus, interrogemus. Quod enim nobis unus eorum renunciat, etiam in ceteris valet. Itaque potissimum testimonio utamur oculorum. Is enim sensus corporis maxime excellit."[36]

[36] De Trinit., XI, c. 1.

## CHAPTER I.

## THE PSYCHICAL ASPECT

OF THE

## *SPECIES SENSIBILIS.*

*ST. AUGUSTINE.*—St. Augustine is usually classed with the patristic philosophers. But the early Scholastics are so generally dependent upon him as their guide and their authority, that, in order to understand any Scholastic doctrine in its earliest phase, it is helpful, if not indeed necessary, to examine first St. Augustine's view of this doctrine.

In psychology as well as in epistemology, St. Augustine is a Platonist. Recently some writers have brought out the Aristotelian elements in his psychology.[37] He does say that soul and body form one substance, that the soul gives being and species to the body.[38] But these are barren principles that do not in any way influence the general tone of his psychology. When he speaks without restraint he is thoroughly Platonic; the soul is "substantia quaedam rationis particeps, regendo corpori accommodata";[39] man is a rational soul making use of a mortal terrestrial body;[40] as every spirit is by its nature superior to the most perfect body, as God is superior to all creatures, even so the soul is superior to all matter.[41]

His epistemology, too, is Platonic. "Scientia insita est nobis";[42] learning is a process of remembering and recalling;[43] though hidden and obscure, ideas are in the mind before they are learnt.[44] As Martin says of him:

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[37] Cf. Rev. Néo-scolast., May, '04.
[38] De Immort. An., c. XI.
[39] De Quant. An., c. XII.
[40] De Moribus Eccles. Cath., I., c. XXVII.
[41] De Gen. ad., Lit., c. XII, 16.
[42] De Quant. An., c. XVII, 50.
[43] Op. cit., c. XX, 34.
[44] Conf., X, 10.

"Dès qu'il se met à écrire, saint Augustin enseigne la doctrine de l'innéité; et il s'y est toujours tenu."[45]

St. Augustine's appreciation of sensation is in perfect accord with his Platonic psychology. All truly wise men, he says, will hold more certainly to the testimony of the intellect than to that of the senses,[46] for the "visio corporalis" which is synonomous with sensation, is dependent upon, and vastly inferior to the "visio intellectualis."[47] Whatever is known by the senses, if anything be known, "et vile est, et satis est."[48] In one place[49] he even admits with the Academicians that whatever is perceived by the senses should be disregarded and considered as nothing; for, as he proves at length,[50] the senses cannot perceive truth. Acting in accordance with these sentiments, he treats of sensation only in disconnected paragraphs and incidental references.

In the main, his theory of sensation is Neo-Platonic. Sensation, according to Plotinus, is the consciousness of bodily affections.[51] St. Augustine, after a long discussion, decides: "Sensus est passio corporis per se ipsam non latens animam."[52] This "passio corporis" arises, of course, from the action of an external material object. But it is a fundamental principle of St. Augustine, as of all Platonists, that the body can in no way affect or act upon the soul; how, then, does the soul become aware of the "passio corporis"? This St. Augustine explains in his "De Musica."[53] If the action of the external object is disagreeable to the body, the soul will with difficulty direct the impression into the channels of its own activity, "in sui operis itinera traducit." On account of this

[45] Saint Augustin, p. 51.
[46] De Gen. ad Lit., c. XII, 24.
[47] Ibid.
[48] Soliloq., I., c. III.
[49] Cont. Acad., I., c. I, 3.
[50] De Div. Quaest. LXXXIII, IX.
[51] Enneads, I., 4, 2.
[52] De Quant. An., c. XXIII.
[53] C. VI.

difficulty the soul becomes more attentive, becomes aware of its own action, and this is sensation. If, contrariwise, the action from without is pleasing to the body, the soul will readily convert this impression into its own activity. But of this action, too, the soul becomes aware, because it is out of the ordinary.

The sense-organs, which are instruments or messengers of sensation,[54] are so modified, that in them the soul is more ready to act attentively upon the "passiones corporis." There is light in the eye, air in the ear, vapor in the nose, humor in the mouth, and something of earth in the body. As soon as these are disturbed from without the soul becomes attentive and acts in harmony with the sense-organ, and this is sensation. "Ipsum sentire movere est corpus adversus illum motum qui in eo factus est." The one thought which recurs again and again is that in sensation the soul is not affected by the body, but that it acts upon the affections of the body. "Has operationes passionibus corporis puto animam exhibere cum sentit, non easdem passiones recipere." If the soul is affected at all "a seipsa patitur, non a corpore."

This whole line of thought St. Augustine borrows from Plotinus. But as Ott observes,[55] there is one important distinction: Plotinus accepts the doctrine of a world-soul which animates all matter. Hence he can logically speak of the body as being affected, as receiving impressions, in virtue of the world-soul. But St. Augustine rejects the world-soul. Hence the body cannot be affected, cannot be pleased or displeased, except in so far as it is animated by the human soul. But St. Augustine here speaks of body and soul, not as substantially united, but as distinct one from the other. Once the world-soul is rejected, the whole Neo-Platonic theory of sensation is without foundation. It is a purely subjective representa-

[54] Cf. de Gen. ad Lit., VII, 19.
[55] Philos. Jahrb., 1900, p. 45 ff.

tive view of sensation, which is well suited to the rest of Platonic psychology.

Another Neo-Platonic doctrine which influences St. Augustine's theory of sensation is that of a medium between body and soul. In one of his works he says: "Inter corpus et animam, quod melius sit corpore, deterius anima, non invenitur."[56] Nevertheless, he accepts as a general principle that the more subtle material bodies are nearer, or more akin, to a spirit, "quamvis longe distante genere."[57] The body of man is largely of earth, still there is something of air contained in the lungs, which is sent out from the heart through the arteries. There is likewise something of fire having the qualities of warmth and light, which rises to the head. This is the source of the rays that spring forth from the eyes; from this, too, rivulets, as it were, flow out to the ears, to the nose, to the palate, and even through the whole body. The light and warmth in the head is the immediate cause of sensation. For hearing, the "lux" is mixed with air, and for smell, with vapor; the humid is mixed with the "lux" for taste, and earth for touch.[58] Because fire and light are nearest to the incorporeal substances, the soul acts immediately on these and through these, on other parts of the body:[59] "Anima tamen cui sentiendi vis inest, cum corporea non sit, per subtilius corpus agitat vigorem sentiendi. Inchoat itaque motum in omnibus sensibus a subtilitate ignis."[60] "Nullus enim sine his duobus vel sensus in corpore est."[61]

But St. Augustine is not influenced by Plotinus alone; indeed, he introduces some thoughts into his theory of sensation which are quite foreign to Neo-Platonism. This reminds us of the fact that St. Augustine is an eclectic; he

[56] De Div. Quaes. LXXXIII, LIX.
[57] De Gen. ad Lit., c. III, 4.
[58] Ibid.
[59] Op. cit., c. VII, 15.
[60] Op. cit., c. III, 5.
[61] Op. cit., c. III, 4.

borrows from various philosophical systems without completely unifying the different elements into one grand synthesis.[62]

In his De Trinitate, Lib. XI., c.2, we read: "Cum igitur aliquod corpus videmus, haec tria, quod facillimum est, consideranda sunt et dignoscenda. Primo ipsa res quam videmus, sive lapidem, sive aliquam flammam, sive quid aliud quod videri oculis potest; quod utique jam esse poterat, et antequam videretur; deinde, visio, quae non erat priusquam rem illam objectatur sensui sentiremus; tertio, quod in ea re quae videtur, quamdiu videtur sensum detinet oculorum, id est, animi intentio. In his igitur tribus, non solum est manifesta distinctio, sed etiam discreta natura. Primum quippe illud corpus sensibile longe alterius naturae est, quam sensus oculorum, quo sibimet incidente fit visio. Ipsaque visio quid aliud, quam sensus ex ea re quae sentitur informatus apparet? Quamvis re visibili detracta nulla sit, nec ulla omnino esse possit talis visio, si corpus non sit quod videri queat: nullo modo tamen ejusdem substantiae est corpus quo formatur sensus oculorum, cum idem corpus videtur, et ipsa forma quae ab eodem imprimitur sensus, quae visio vocatur. Corpus enim visum in sua natura separabile est: sensus autem erat in animante, etiam priusquam videret quod videre posset, cum in aliquid visibile incurreret, vel visio quae fit in sensu ex visibili corpore, cum jam cognitum est et videtur; sensus ergo vel visio, id est sensus formatus extrinsecus, ad animantis naturam pertinet, omnino aliam quam est illud corpus quod videndo sentimus, quo sensus non ita formatur ut sensus sit, sed ut visio sit. Nam sensus est ante objectum rei sensibilis; nisi esset in nobis, non distaremus a caecis, dum nihil videmus, sive in tenebris, sive clausis luminibus. Hoc autem distamus quod nobis inest et non videntibus, quo videre possimus, qui sensus vocatur; illis vero non inest; nec aliunde nisi quod

[62] Cf. Ueberweg, II, p. 126.

eo carent, caeci appellantur. Itemque illa animi intentio, quae in ea re quam videmus sensum tenet, atque utrumque conjungit, non tantum ab ea re visibili natura differt; quandoquidem iste animus illud corpus est; sed ab ipso quoque sensu atque visione; quoniam solius animi est haec intentio; sensus autem oculorum non ob aliud sensus corporis dicitur, nisi quia et ipsi oculi membra sunt corporis; et quamvis non sentiat corpus exanime, anima tamen commixta corpori per instrumentum sentit corporeum, et idem instrumentum sensus vocatur. . . . Haec igitur tria, corpus quod videtur, et ipsa visio, et quae utrumque conjungit intentio, manifesta sunt ad dignoscendum, non solum propria singulorum, verum etiam propter differentiam naturarum.

Atque in his cum sensus non procedat ex corpore illo quod videtur, sed ex corpore sentientis animantis, cui anima suo quodam miro modo contemperatur; tamen ex corpore quod videtur gignitur visio, id est sensus ipse formatur; ut jam non tantum sensus qui etiam in tenebris esse integer potest, dum est incolumitas oculorum, sed etiam sensus informatus sit, quae visio vocatur. Gignitur ergo ex re visibili visio, sed non ex sola, nisi adsit et videns. Quocirca ex visibili et vidente gignitur visio, ita sane ut ex vidente sensus oculorum, et aspicientis atque intuentis intentio; illa tamen informatio sensus, quae visio dicitur, a solo imprimatur corpore quod videtur, id est, a re aliqua visibili; qua detracta, nulla remanet forma quae inerat sensui, dum adesset illud quo videbatur; sensus tamen ipse remanet qui erat et priusquam aliquid sentiretur; velut in aqua vestigium tamdiu est, donec ipsum corpus quod imprimitur inest; quo ablato nullum erit, cum remaneat aqua, quae erat et antequam illam formam corporis caperet. Ideoque non possumus quidem dicere quod sensum gignat res visibilis; gignit tamen formam velut similitudinem suam, quae fit in sensu, cum aliquid videndo sentimus. Sed formam corporis quod

videmus, et formam quae ab illa in sensu videntis fit, per eumdem sensum non discernimus; quoniam tanta conjunctio est, ut non pateat discernendi locus. Sed ratione colligimus nequaquam nos potuisse sentire, nisi fieret in sensu nostro aliqua similitudo conspecti corporis. Neque enim cum annulus cerae imprimitur, ideo nulla imago facta est, quia non discernitur, nisi cum fuerit separata. Sed quoniam post ceram separatam manet quod factum est ut videri possit, propterea facile persuadetur, quod inerat jam cerae forma impressa ex annulo et antequam ab illa separaretur. Si autem liquido humori adjungeretur annulus, eo detracto nihil imaginis appararet: nec ideo tamen discernere ratio non deberet, fuisse in illo humore, antequam detraheretur annuli formam factam ex annulo, quae distinguenda est ab ea forma quae in annulo est, unde ista facta est quae detracto annulo non erit, quamvis illa in annulo maneat unde ista facta est.

Sic sensus oculorum non ideo non habet imaginem corporis quod videtur, quia eo detracto non remanet, ac per hoc tardioribus ingeniis difficillime persuaderi potest, formari in sensu nostro imaginem rei visibilis, cum eam videmus, et eamdem formam esse visionem."

Does not this passage call to mind the εἶδος-theory of Aristotle? It is true, neither Ott in his series of articles, nor Martin when treating of St. Augustine's theory of sensation, refer to this passage. Even Siebeck, who seems so anxious to accuse the Scholastics of corrupting Aristotle's εἶδος-theory, says nothing of this passage. Hence I have quoted it *in extenso* that the author's meaning might appear from the context. It is very clear that St. Augustine is speaking of the origin of vision, which he ascribes to three factors: the object, the sense, and the "intentio animi." The object, of course, is any material being having light or color.

What is the "sensus" of which he speaks? Is it merely the material organ of the body, the eye? In the first place, the "sensus" belongs "ad animantis natur-

am''; a ''corpus exanime'' has no sensation; the sense proceeds ''ex corpore sentientis animantis.'' Hence it is at least an animated organ. But it is more than that; it is the organ plus something else. St. Augustine calls it ''sensus oculorum''; therefore it is something distinct, though not separate, from the eye. It is called ''sensus corporis,'' because the eye is a member of the body; consequently, strictly speaking, the sense does not pertain to the body. It differs from the ''intentio,'' because this pertains to the soul alone; hence, by inference, the sense pertains in part to the soul, in part to the body. Finally, the ''sensus'' is a power ''quo videre possimus,'' in virtue of which we differ from the blind even when we are not actually seeing.

This meaning of ''sensus'' appears also in other works of St. Augustine. The sense is a faculty of the soul which is exercised through the body, but it is not a faculty of the body.[63] Indeed, we hear by means of our ears, but our ears do not hear; ''alius est intus qui audit per aurem;''[64] ''non ergo oculi vident, sed quidam per oculos videt.''[65]

The importance of this inquiry concerning the meaning of ''sensus'' is brought home by such expressions as ''ipsaque visio, quid aliud quam sensus ex ea re quae sentitur informatus apparet?'' If, then, by ''sensus'' St. Augustine meant the material organ, we should have to conclude that, to his mind, sensation, or vision, is simply the ''informatio,'' so to say, of this organ, the effect of physical or chemical accidents of the object on the organ. But since, as we have seen, the ''sensus'' is more than the mere organ, the ''informatio,'' too, is more than the mere physical or chemical impression.

By ''informatio'' St. Augustine means: ''Ipsa forma . . . ab eodem (objecto) imprimitur sensui.'' What,

[63] De Gen. ad Lit., c. III, 5.
[64] Serm., LII, 7.
[65] Op. cit., CXXVI, 2.

then, is this "forma quae inerat sensui?" In the first place, this form in the sense is not of the same nature as the object which is seen. It arises from the object, "a solo imprimatur corpore quod videtur," just as a reflection in water arises from an object. So, too, it is a likeness of the object, "velut similitudinem suam." In another passage of the same chapter he calls it "imago simillima rei ejus quam cernimus." The "species corporis" is seen, and the image of this species is in the sense.

Reason tells us that we have no sensation unless some likeness of the object be in our sense. Just as a ring, immersed in a liquid, must give to this liquid a form which is similar to its own form but not identical with it, so, too, in sensation an impression of forms must take place.

This "informatio sensus" is sensation. Without it sensation is not possible. Must we then infer that the object acts upon the sense, and that thus matter affects spirit? We have seen, according to St. Augustine, that the body does not act upon the soul, because the body, being material, is of a lower order of being than the soul. "Omni enim modo praestantior est qui facit, ea re de qua aliquid facit; neque ullo modo spiritu praestantius est corpus; imo perspicuo modo spiritus corpore."[66] Consequently neither can a material object in any way act upon the sense, which is a faculty of the soul. This image or likeness of the object in the sense is of a higher order of being than the object itself, and hence, is not produced by the object, but "ipse spiritus in seipso facit (corporis imaginem)"[67] The spirit continually forms in itself an image of the object perceived.[67a]

St. Augustine regards the sense as an active faculty. In vision the sense goes out to the object; "Is (visus)

[66] De Gen. ad Lit., c. XII, 16.
[67] Ibid.
[67a] Ibid.

enim se foras porrigit.''[68] Vision takes place when the ''sensus oculorum'' strikes upon an object.[69] The objects of the other senses come to the organ of sense: ''In aures influit sonus, aut naribus exhalationes, palato sapores, caetero corpori qualibet solida et corpulenta admoventur extrinsecus.''[70] But even here the sense is active; *e. g.*, when the air in the ear is set in motion by the movement of air outside the ear, that is, by sound, the soul does not lose control over the movement of the ''aer serenissimus'' in the ear. But St. Augustine concedes that the soul moves this ''aer serenissimus'' in a different manner before the sound strikes the ear, than after.[71] In either case, however, the sense is active, actuated not by the object, but ''intentione facientis.''

On the other hand, we read in the passage from the ''De Trinitate'' quoted above: ''Informatio sensus . . . a solo imprimatur corpore quod videtur, id est, a re aliqua visibili, qua detracta, nulla remanet forma quae inerat sensui, dum adesset illud quod videbatur;'' and further on in the same chapter: ''Ut manifestum sit, hanc affectionem nostro sensui ex ea re quae videbatur impressam.'' How can these statements, seemingly so contradictory to the above expressions regarding the activity of the sense, be intelligently explained?

The general principle of St. Augustine's theory of sensation must stand: the sense is active, is the active cause of the ''forma quae inerat sensui.'' But this does not exclude any and every influence of the object. The sense of itself is indifferent. Though active, it must be determined to form in itself a specific image, and this is the rôle of the object. In other words, the image arises out of the object, the object offers the material out of which the sense forms the image. The object is the

[68] De Quant. An., c. XXIII.
[69] De Trinit., ut supra.
[70] De Mus., c. VI, 5.
[71] Ibid.

passive or material cause of the image, whereas the sense is the active efficient cause.

As an active faculty, the sense is actuated *ab intrinseco, i.e.,* by the "animi intentio, quae in ea re quam videmus sensum tenet, atque utrumque (object and sense) conjungit." This "intentio" pertains to the soul alone, "quia voluntas est." Its function is "ut et sensum formandum admoveat ei rei quae cernitur, et in ea formatum teneat." Consequently this is really the most important factor in the origin of sensation. If, finally, we inquire what determines the "intentio animi," St. Augustine refers us to the will of God, the immutable designs of God's wisdom.[72]

Though the species or image in the sense arises out of a material object, it is not material. It is a "species sine tumore molis, sine strepitu vocis, sine spatio vel loci, vel temporis."[73] In the same moment when a material object is touched by a sense, there appears in the soul, not a body, but something similar to a body;[74]—similar, because it represents the material conditions of the object. Just as water receives the form of an object, so likewise does the sense; and as a reflection in water represents the material conditions of the object, so also the image in the sense is a likeness of the object as it exists in matter. It is a "forma quae ab illa (forma corporis) in sensu fit." Like the form of a ring in a liquid, it is the image of the "species corporis." "Nullo modo . . . ejusdem substantiae est corpus quo formatur sensus oculorum . . . et ipsa forma quae ab eodem imprimitur sensui."[75]

Finally, it must be observed that St. Augustine does not regard this image or species as the immediate object of sensation. As the Scholastics say, it is not the "prin-

[72] De Trinit., lib. III, c. 2; cf. Op. cit., c. 8.
[73] De Civit. Dei, lib. VIII, c. 6.
[74] De Gen. ad Lit., c. XII, 24.
[75] De Trinit., ut supra.

cipium quod cognitionis," but rather the "principium quo." By means of this image we see, not the image, but the object itself. The sense itself, says St. Augustine, does not distinguish between the natural form of the object and the form which is in the sense. By reason alone do we postulate the existence of this form in the sense;[76] in fact, we are not conscious of the image in the sense until, by an act of the will, we turn our attention away from the object and reflect on the mental process.[77]

To sum up, according to St. Augustine, we cannot know by our senses, cannot have sensation, unless an image of the object be in the sense. This image, formed in the sense by the spirit and out of the object, is an immaterial representation or likeness of the object. Its function is to unite the subject and object of sensation, and to direct or to determine the sense-faculty, but not to actuate it. How it originates, St. Augustine does not state, except that it results from the action of the sense on the object of sense. St. Augustine sometimes calls it "species" or "forma," but more commonly, "imago" or "similitudo."

*SCOTUS ERIUGENA.*—The age of St. Augustine was followed by a woeful dearth of Christian learning. After the devastating hordes of barbarians had overrun Europe, Christianity faced the problem of creating a new civilization—a problem not of years and decades, but of centuries. The most imperative need of these centuries was the preservation of the past lore. Hence we have the encyclopedic compilations of Cassiodorus, of Venerable Bede, of Isidore of Seville, of Rabanus Maurus, and others. Their express purpose was the presentation of traditional doctrines, regardless of their own opinions. Whenever they treat of philosophy, St.

[76] De Trinit., XI, c. 2.
[77] De Gen. ad Lit., c. XII, 11.

Augustine is their final authority; as Cassiodorus writes: "Hoc enim Pater sentit Augustinus."[78]

The instruction of the populace was another urgent demand of the times. This led to the compilation of short dogmatic manuals and popular treatises in which disputed questions and speculative discussions gave way to practical suggestions. In psychology, the περὶ φύσεως ἀνθρώπου of Nemesius of Edessa, a contemporary of St. Augustine, served as a model for these manuals. This work of Nemesius has been styled the first systematic treatise on anthropology.[79] Other works of this period dealing with the origin and nature of the soul, its virtues and vices, are directive rather than speculative, as, for instance, the "De Statu Animae" of Claudianus Mamertus and the "De Ratione Animae" of Alcuin. In his "De Fide Orthodoxa" (C. XII, sq.), St. John Damascene presents a "psychology in nuce" borrowed largely from Nemesius. So dependent is he when he speaks of sensation, as to reiterate even the trivial observation of Nemesius that, of all animals having ears, man and ape alone cannot move them. The problem of sensation was, at best, dealt with quite summarily. Rabanus Maurus, "the leading representative of this encyclopedic literature in philosophy,"[80] begins the last chapter of his "De Anima" with the words: "Nunc restat ut de officiis quinque sensuum pauca dicantur."[81] And these few words are borrowed from St. Augustine.

As a further index of the regard, or disregard, with which these early middle ages viewed psychology, it may be noted that the manuals of psychology became shorter and shorter. Finally Ermanricus of Ellwangen, a pupil of Rabanus, reduced all knowledge about the soul, which he considered worth knowing, to three chapters, one from Isidore of Seville, another from Alcuin,

[78] De An., c. 9.
[79] Cf. De Wulf, Hist. of Med. Philos., p. 98.
[80] Ibid., p. 126.
[81] C. XII.

and a third from Gennadius; and these are largely moral, not speculative.[82]

In the ninth century we find the first system of constructive thought since St. Augustine. The study of ancient Greek philosophy, a wealth of imagination, and a comprehensive synthetic mind lifted Scotus Eriugena above the commentators and compilers of his, and of earlier centuries.[83] Alcuin in the eighth century apologized when he introduced dialectics into theology; Scotus Eriugena boldly attempted a rational synthesis of all knowledge, human and divine. Whether we accept little of his philosophy or none at all, we still owe him the credit of reintroducing independent philosophical speculation.

The philosophy of Scotus is, in the main, Neo-Platonic. Some Aristotelian principles appear in his works, but even these are tinged with emanationism which permeates the whole system of thought. Psychology is far from holding a central place in his scheme of knowledge. "Majus enim est quod definit quam quod definitur."[84] Hence the soul cannot fully know its own essence and constitution. What psychology he does give us, is plainly inspired by Plato, the "philosophorum summus."[85] For instance, he speaks of the soul as a simple and individual nature and as the real ego,[86] the body being a part of the ego only in so far as it is possessed by the soul.[87] The soul is the principle of activity in the body, indeed, it creates its own body.[88] The action of the soul on the body is mediated by a finer substance which is similar to light and air.[89] This last doctrine he owes to Plotinus or to St. Augustine.

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[82] Werner, Denkschr. d. Wiener-Akad., Vol. 25, p. 80.
[83] Cf. Turner, Op. cit., p. 256.
[84] De Divis. Nat., I, 43.
[85] Op. cit., III, 36.
[86] Op. cit., II, 23.
[87] Op. cit., I, 54.
[88] Op. cit., II, 24.
[89] Op. cit., III, 36.

In his theory of knowledge, too, Scotus is plainly Neo-Platonic. There are in man two cognitive faculties: the higher, to which belong intellect, reason, and the interior sense (διάνοια); and the lower, which is the external sense (αἴσθησις). The intellect is the power of contemplation and has God for its object; the object of reason is the primordial causes of things; by our internal sense we know the nature and interrelation of phenomenal things.[90] Hence we must conclude that by our external sense we perceive merely the appearances, the phenomena of the external world[91]

In one place[92] we are informed that all knowledge begins with sense-experience; that by abstraction we rise from sense-knowledge to contemplation. However, this ascending knowledge is only preparatory to the knowledge that avails most, the knowledge descending from God to primordial causes, to the nature and essence of things, to sensible nature. Even apart from this rather disparaging account of the rôle of sensation, Scotus' method is so strikingly analytic and deductive as to warrant the conclusion that, in his mind, sensation is of little importance as a faculty of knowlege. In fact, no other view of sensation is compatible with Neo-Platonic psychology.

We can, then, hardly expect a complete systematic theory of sensation from him. Scotus does tell us[93] that the sense is a simple and uniform faculty of the soul, having five corporeal instruments or organs. Though belonging to the soul rather than to the body, the sense does not form an essential part of the soul. It is a messenger, an "internuncius," between the soul and the body, or "conjunctio quaedam est animae et corporis."

What interests us more directly, is the fact that Scotus

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[90] Op. cit., II, 23.
[91] Cf. Stöckl, Gesch. d. Philos. d. Mittelalt., I, p. 79.
[92] Op. cit., II, 23.
[93] Op. cit., II, 23.

alludes to St. Augustine's theory of sense-images. He says of the external sense: "Quod per quinquepertitum corporis instrumentum, veluti per quasdam cujusdam civitatis quinque portas, sensibilium rerum similitudines ex qualitatibus et quantatibus exterioris mundi venientes, ceterisque, quibus sensus exterior formatur, interius recipiat, et veluti ostiarius quidam internuntiusque ea, quae extrinsecus introducit, praesidenti interiori sensui, annunciet."[94] The likenesses, then, of objects are received by the external senses. These likenesses are something distinct from the impressions in the sense-organs, because the sense receives likenesses through the sense-organ. They are not the result of the physical or chemical changes in the organ of sense, since they are received through the organs as through so many gates. Hence the organs of sense do not contribute to the formation of the likenesses, but serve merely as passageways. In another passage of this same chapter he speaks of the soul as receiving the "phantasias ipsarum rerum per exteriorem sensum." Since the sense as a faculty of the soul, or the soul itself, receives these "similitudines" or "phantasias," they must be in some way immaterial; *quidquid recipitur, recipitur secundum modum recipientis.* If, then, Scotus says in this same paragraph: "Et illa prior (imago in sensibus expressa) corpori semper adhaeret," this does not imply that the "imago" is material. Of the sense itself, which is physical rather than corporeal, he says: "Sine corpore eo nec utitur, nec uti potest."[95] Indeed, it cannot be disputed that Scotus regards the body as a necessary condition for the origin of sense-images; but to say that, therefore, he considers the image corporeal would be an unwarranted conclusion.

Another fact to be observed is that, according to Scotus, the "similitudines" come "ex qualitatibus, etc." St. Augustine had held that the images arise out of the

[94] Ibid.
[95] Op. cit., II, 23.

object and that the sense is informed by the object. Scotus is somewhat more specific. He maintains that the images come from the qualities, quantities, and other accidents of the object, and that these accidents inform the sense. This substantiates the inference drawn above that, according to Scotus, by our external senses we can only know the phenonema of things.

The "*ex* qualitatibus, etc.," is significant. It shows that Scotus, like St. Augustine, regarded the object as the material cause *out of which* the sense-images are formed. In another place he clearly states that the sense itself is the active cause. "Extenditur enim visus ad recipiendas visibilium rerum colorabiles species; extenditur auditus ad vocum seu aliorum sonituum, percussione aeris erumpentium, prosodias, quas formas coloresque vocum dicimus in se imaginandas."[96] The forms and species of external objects are pictured or imaged in the sense by the sense; they are taken *from* the objects *by* the sense. Consequently, according to Scotus, the union between the object and the subject of sensation is due, not to any action on the part of the object, but to the activity of the sense, which goes out to the object. St. Augustine held the same view regarding vision; Scotus, more consistently, applies it also to hearing and perhaps even to smell; for, he says: "Ceteri enim tres sensus intra terminos corporis contineri videntur, quamvis olfaciendi sensus foris protendi non incongrue, ut arbitror, existimetur."[97]

It is the function of the image to determine the sense and to unite the object and the subject. We read: "Tertius motus est compositus, per quem, quae extra sunt, anima tangens, veluti ex quibusdam signis apud seipsam visibilium rationes reformat . . . Deinde per ipsas (phantasias) ad rationes earum, quarum phantasiae sunt, perveniens, intra seipsam eas rationes dico, tractat atque

[96] Op. cit., III, 36.
[97] Ibid.

conformat.''[98] These words would seem to define the ''phantasiae'' as intermediaries from which we infer the knowledge of external things. But remembering that Scotus looks upon the phenomena of things as the sole object of sensation, we must interpret the above words as meaning that, through the phenomena perceived by the sense, the soul arrives at the knowledge of the nature of things, ''rationes reformat,'' ''ad rationes earum . . . perveniens.'' Scotus does regard sense-knowledge as a means or stepping-stone to higher knowledge, and consequently, in a sense, intermediary. Thus he says that the interior sense, the ''tertius motus,'' begins ''ex phantasiis rerum exteriorum per exteriorem sensum sibi nunciatis.''[99] Nevertheless, the ''imago in sensibus expressa . . . quamvis in sensu sit, seipsam non sentit.''[100]

In some particulars this theory of Scotus is more specific than that of St. Augustine, as was indicated. In so far it shows a development. On the other hand, many details are here omitted, which St. Augustine had discussed at length. The general tendency is the same; the activity of the sense is emphasized, that of the object is regarded as minimal. Scotus applies to the species all the names used by St. Augustine, and adds one more, taken from the Greek, viz., ''phantasia.''

*ST. ANSELM.*—It is not surprising that St. Anselm, the Father of Scholasticism, accepts the psychical aspect of the species sensibilis, since he refers to St. Augustine on nearly every page of his writings. This dependence appears at first sight in the isolated problems of psychology which St. Anselm discusses. Man is constituted of body and soul, ''ex natura animae et ex natura cor-

[98] Op. cit., II, 23.
[99] Ibid.
[100] Ibid.

poris.''[101] Again he defines man as an ''animal rationale mortale.''[102] At the time of St. Anselm, as we shall see in the next chapter, *form* was defined as a distinct property or quality of an object. Either because he himself accepted this view of his contemporaries, or to avoid being misunderstood by them, St. Anselm does not apply the doctrine of matter and form to the union of body and soul in man.[103] He defends the unity of body and soul more in the sense of Plato:[104] the soul is the causa efficiens of all activity in the body; it is the spontaneous active principle.[105] The body belongs to the essence of man only as a necessary tool or instrument of the soul.

St. Anselm's view of sensation, even as his psychology in general, calls to mind the doctrine of the Bishop of Hippo. He nowhere formulates a systematic theory of sensation; even his allusions to this problem are few and incidental. The theory of intellectual knowledge is developed far more completely.[106] Herein he is logical, because he says truth is the object of the intellect, not of the senses;[107] introspection is more important than observation.[108] Nevertheless he contends that sensation is a *conditio sine qua non* for the knowledge of material extended objects.[109] By means of the memory the senses furnish the material of thought.[110] Sensation, then, is an activity of the soul whereby we come to the knowledge of external bodies; ''sola corporea sunt sensibilia, quia sensus circa corpus et in corpore sunt.''[111]

Sensation is an activity of the soul, ''anima sentit.''[112] But since the soul is immaterial, it must make use of

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[101] Meditat., c. 19.
[102] De Gramm., c. 8.
[103] Cf. De Vorges, St. Anselm, p. 193.
[104] Cf. Fischer, Die Erkenntnissl. Anselms, p. 5.
[105] Prosl., c. 13.
[106] De Vorges, op. cit., p. 88ff.
[107] De Verit., c. 6.
[108] Cf. Monol., c. 46.
[109] De Lib. Arbit., c. 3.
[110] Monol., c. 47.
[111] Prosl., c. 6.
[112] Ibid.

material means in order to know material objects. These means or conditions of sensation are the organs of sense.[113] Hence we have sensation "per corpus." "Qui enim sentit, cognoscit secundum sensuum proprietatem ut per visum colores, per gustum sapores."[114]

Domet de Vorges says of St. Anselm: "Ni pour la sensation ni pour l'intelligence, il ne donne une théorie de la perception."[115] We shall therefore search his works in vain for a development of the species-theory. We find evident traces of this theory as presented by St. Augustine, but little more. Since, however, several passages from the "Monologium" are commonly connected with the Scholastic theory of the species sensibilis, because of a false interpretation placed upon them, it will not be out of place to discuss St. Anselm's view of this theory, as far as we can gather it from incidental allusions.

In the De Veritate, c. 6, St. Anselm thus describes a phenomenon of sight: "Cum visus transit per corpus aliquod aerei coloris, non aliter impeditur assumere similitudinem coloris, quem ultra videt, quam cum transit per aera. . . . Quapropter, quoniam post unum acceptum colorem, secundum quod illo affectus est, alium, quicumque occurrat, aut nullatenus, aut minus integre suscipit; ideo, illum, quem prius cepit, aut solum, aut cum eo qui post occurrit, renuntiat. Si enim visus, quantum capax est coloris, tantum afficitur priore colore, non potest alium sentire simul colorem; si autem minus quam colorem sentire possit priore afficitur, potest alium sentire."

The activity of the sense is here emphasized, as it is in St. Augustine; "visus transit per corpus, etc." What is more important, St. Anselm here distinguishes between *colore affici, colorem accipere, suscipere, capere, similitu-*

[113] Meditat., c. 19.
[114] Prosl., c. 6.
[115] Op. cit., p. 111.

*dinem coloris assumere* on the one hand, and *sentire colorem* on the other. The first group of expressions refer to the material impression of color on the lens of the eye. Remembering that St. Anselm is a Platonist or Augustinian in psychology, he would never say that the sense of sight as a faculty of the soul is affected by color. Nor would he say that the sense-faculty receives color, not even that it assumes the likeness of color. All this is true enough of the physical organ of sight, but not of the immaterial faculty or sense. Besides, the "visus" in this meaning, being limited, is capable of receiving only a definite amount of color. Certainly this does not apply to the faculty of sight. As Fischer points out,[116] St. Anselm distinguishes two elements in sensation, the physical element, which is the material impression on the sense-organ, and the psychical element, expressed above by the "sentire colorem," by which the soul knows the object which causes the affection of the sense-organ.

The texts which are falsely adduced as revealing St. Anselm's position regarding the species sensibilis are taken from the "Monologium." There we read: "Cum cogito notum mihi hominem absentem, formatur acies cogitationis meae in talem imaginem ejus qualem illam per visum ocularem attraxi."[117] In another passage we read: "Sed in hominis cogitatione cum cogitat aliquid quod extra ejus mentem est, non nascitur verbum cogitatae rei ex ipsa re, quia ipsa, absens est a cogitationis intuitu, sed ex rei aliqua similitudine vel imagine quae est in cogitantis memoria, aut forte quae tunc cum cogitat per corporeum sensum ex re praesenti in mentem attrahitur."[118]

From these texts, Reid[119] was the first to conclude that St. Anselm defended the species as intermediaries, as the *objectum quod cognitionis* and not the *objectum quo;*

[116] Op. cit., p. 21.
[117] Monol., c. 33.
[118] Op. cit., c. 62.
[119] Essays on the Intellectual Powers, II, 8.

in other words, that St. Anselm defended the representative or mediate view of sensation. Hauréau[120] united with the founder of the Scottish school in this contention. Now, in both texts, St. Anselm evidently speaks of the formation of a concept, of "cogitatio," not of sensation. He sees an analogy between the generation of the Divine Word and the formation of a concept.[121] The theory of intermediate images, however, is a theory of sensation. Whether in thought the mind is directed to the object itself or to an image of the object brought to the mind by the external senses, this has little influence on the theory of sensation.

Besides, the passages are too incomplete and too indefinite to show us the exact thought of St. Anselm. The words, "nascitur verbum cogitatae rei . . . ex rei aliqua similitudine, etc.," might mean that the sense-image is an intermediary which we see directly, and that, by inference only, we conclude to an external object; but they may equally as well mean that the sense-image is a means in which we see the object immediately. But since our opponents claim that this theory of St. Anselm became more explicit in later Scholastics, we are justified in suspending our judgment, and interpreting these vague passages in the light of later Scholastics. And there, as we shall see, the doctrine of intermediate images is most emphatically and explicitly rejected. If, on the other hand, we interpret these passages in accordance with the explicit teaching of St. Anselm's great authority and guide, St. Augustine, then, too, we must reject the interpretation of Reid and Hauréau.

Finally, granting that the passages are vague and incomplete, they hint at the doctrine of immediate perception rather than at the opposite view. Thought is based on the sense-image; but the image is not the object

[120] Hist. de la Philos. scol., I, p. 270.
[121] De Vorges, op. cit., p. III.

of thought: "Nascitur verbum cogitatae rei" and not the "verbum" of the image.

All the distinctive features of the psychical aspect of the species sensibilis flow directly from Platonic psychology and epistemology. If the soul is the principle of all activity and the body is merely the tool or the instrument of the soul; if matter can in no way act upon spirit, if all knowledge is innate and learning is a process of remembering;—then the psychical aspect of the species sensibilis is the only logical one; then the sense itself is the active efficient cause of the species sensibilis. The object can, at most, direct or determine this activity of the sense which arises *ab intrinseco* and not *ab extrinseco, i. e.,* the sense is an active faculty. Then, too, the species sensibilis is evidently immaterial, since it is produced by the psychical faculty as a determination of this same faculty.

Again it follows from Platonic psychology that the physical and physiological factors accompanying sensation are of little consequence. These are in no sense causal; they are merely so many phenomena that occasion the origin of sensation. The influence of the object is minimal. Hence introspection and deduction are more fruitful sources of knowledge than observation and induction. "Noli foras ire, in te redi, in interiore homine habitat veritas."[122] Mysticism, then, is preferable to science, and sensation, a lowly means of knowledge, is scarcely deserving of systematic study.

It must not, then, be imagined that the psychical aspect of the species sensibilis ceased with St. Anselm. Whenever psychology is purely Platonic, then the view of the species sensibilis is purely psychical. Thus in the thirteenth century, Matthew of Aquasparta, a disciple of St. Bonaventure, presented a theory of sensation which is as purely psychical as is that of St. Augustine.[123]

[122] St. Augustine, De Vera Relig., c. 72.
[123] Cf. De Wulf, op. cit., p. 291.

When, however, Arabian and Aristotelian elements are introduced into Platonic psychology, then, too, the aspect of the species sensibilis becomes less distinctly psychical; it assumes new characteristics without entirely putting off the old. This struggle between opposing tendencies regarding the species-theory will claim our attention in the next chapter.

## CHAPTER II.

## THE MATERIALISTIC ASPECT

OF THE

## *SPECIES SENSIBILIS.*

*ARABIAN PHILOSOPHY.* — Arabian philosophy comes into prominence about the ninth century, when the treasures of Greek thought were translated by the Syrians.[124] The Arabians of that day were an active, hearty people, striving to conquer the world and to control the forces of nature. Devoted to science even more than to philosophy, they were preeminent in astronomy, mathematics, and medicine. While in the Western world all philosophical speculation followed closely in the path of St. Augustine with Plato as a starting-point, the Arabians preferred the leadership of Aristotle: "Parmi les philosophes grecs on choisit de préférence Aristote, sans doute parce que sa méthode empirique s'accordait mieux que l'idealisme de Platon avec la tendance scientifique et positive des Arabes."[125]

Together with this scientific disposition, there was in the Arabian mind a tendency towards mysticism; the Orient has ever been the home of mysticism.[126] When, therefore, the Syrians presented the scientific lore of Aristotle, tinctured with Neo-Platonic mysticism,[127] the Arabians accepted it with little hesitation. These are the principal sources that determine the Arabian theory of sensation.

Avicenna, the princeps philosophorum among the Arabians, maintains that all perception, all knowledge, implies the reception of the form of the object perceived

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[124] Pollak, Arch. f. Gesch. d. Philos., 1904, p. 211.
[125] Ibid.
[126] Stöckl., Op. cit., II[1], p. 14ff.
[127] Pollak, Ibid.

by the subject perceiving.[128] As Forget states this principle of Avicenna: "La perception d'un objet a lieu lorsque son entité se trouve présente dans le sujet percevant et est contemplée par ce qui, en lui, peut percevoir. De deux choses l'une: ou bien cette entité est la réalité même de la chose qui existe en dehors du sujet percevant pendant qu' il percoit; . . . ou bien cette entité est une image de la réalité de l'objet, retracée dans la personne du sujet percevant et non séparée de lui; c'est l'hypothèse restante."[129] He demands, therefore, the union of subject and object as a condition for all perception. He concedes, too, that the object may be present in the subject according to a mode of being, other than its mode of being in the order of nature: it may be present in a representative image. The distinctive feature of sensation as a form of knowledge is that the sense receives the form of the object as it exists *in concreto,* that is, not abstracted from matter or from the conditions of matter.[130]

Augustinian psychology considered spirit so far superior to matter, that soul and body could not be substantially one. The Arabians differed from this view. They accepted Aristotle's doctrine that soul and body are one substance, of which the soul is the form and the body is the matter. The soul is the "perfectio prima corporis naturalis instrumentalis habentis opera vitae."[131] Being the active principle in man, the soul determines his essence and makes him to be what he is: "Le rapport de la matière à la forme est le rapport du cuivre à la statue."[132] But the Arabians tear down what they have built up on these principles by introducing a *tertium quid,* an intermediary between body and soul.

Since, according to St. Augustine, the difference between matter and spirit is so great that mutual inter-

[128] Winter, Avicennas Opus egregium de Anima, p. 38.
[129] Rev. Néo-scol., 1888, p. 24.
[130] Winter, Op. cit., p. 39.
[131] Winter, Op. cit., p. 20; cf., Forget, Op. cit., p. 25.
[132] Carra de Vaux, Avicenne, p. 212.

action is impossible, it was quite logical for him to postulate an internal medium, an air-like substance through which the soul could act upon the body. But not only St. Augustine and other Platonists demand this intermediary; even Aristotle explains the interaction of body and soul by the vital warmth.[133] With the Arabians the idea of a medium is generally accepted, and it received a relatively fixed form in their doctrine of the spiritus.

Costa-ben-Luca, a Syrian physician and philosopher, gives us the most complete and most systematic account of the doctrine of the spiritus, prevalent among the Arabians, in his "De Differentia Spiritus et Animae."[134] We read there: "Omnis spiritus, qui fuerit in his partibus subtilior et melior, et clarior et fortior erit ad recipiendum actus animae ceteris partibus corporis, et aptior secundum quantitatem subtilitatis et claritatis recipiet de actibus animae."[135] This spiritus is "quoddam corpus subtile quod in humano corpore oritur ex corde et fertur in assurienet, *i.e.*, in venis pulsus ad vivificandum corpus. . . . Similiter oritur ex cerebro et nervis et operatur sensum et motum."[136] The former, the spiritus vitalis, operates the vital functions in the body, such as growth, circulation, and respiration; the latter, the spiritus animalis, arises from the spiritus vitalis, for he says: "De pulsibus ipsis contextis extenditur quaedam pars sub cerebro petens inferiora cerebri, apta ad recipiendum spiritum animalem, trahens ei spiritum vel partem de spiritu vitali, quem diximus esse in ventriculis cordis."[137] Located in the brain and in the nerves, the spiritus animalis operates sensation and motion. Besides, it is the proximate cause of thought; "in quibusdam enim est subtilis et clarus, et hic est rationabilis, cogitans dispo-

[133] Siebeck, Gesch. d. Psychol., I², p. 137.
[134] Barach, Bibliotheca philos. med. aetatis.
[135] Op. cit., c. IV.
[136] Op. cit., c. I.
[137] Op. cit., c. II.

sitione et bonae cogitationis; est autem in quibusdam corruptus eritque talis amens, irrationabilis, levis atque stultus.''[138] The spiritus in the anterior ventricle of the brain operates sensation; the one in the middle ventricle, thought and knowledge; and the one in the posterior ventricle, memory and motion.[139]

Sensation is an *actio a parte objecti,* and a *passio a parte subjecti;* this is another concept which is fundamental in the Arabian theory of sensation. St. Augustine pictured sensation as an action going out from the subject to the object. In the Arabian theory this is reversed; the object is active, the subject is acted upon; ''ex proprietate lucis est operari in visum, ex natura visus est, pati ex luce.''[140] The sense does not suffer the loss of anything, but it suffers in so far that, being affected from without, it receives something. In other words, a quality of the object causes a change in the sense; the sense becomes like to the object.[141] Hence the Brothers of Purity say: ''Sinnliche Wahrnehmung ist nichts mehr als dass die Mischung des Sinnes dem sinnlich Wahrgenommenen in der Qualität gleich werde, und die Seele von der Änderung dieser Mischungen wisse.''[142]

This change in the subject, however, is not affected by the emanation of εἴδωλα from the object. Avicenna explicitly rejects this theory of Democritus and of the ''secta naturalium.''[143] Being a qualitative change, not a quantitative one,[144] it is rather of the nature of pain: ''Ista operatio, quam operatur lux in glacialem, est ex genere doloris.''[145] Ordinarily this affection is so slight that we are not conscious thereof. It must, however, reach a certain intensity before perception is aroused;

[138] Ibid.
[139] Op. cit., c. IV.
[140] Bauer, Die Psychol. Alhazens, p. 23.
[141] Ibid.
[142] Dieterici, Philos. d. Araber, Bk. VII, p. 30.
[143] Winter, op. cit., p. 39.
[144] Ibid.
[145] Bauer, op. cit., p. 47.

on the other hand, if it be too severe, the sense-organ is injured.[146] This reference to the threshold of sensation is probably the earliest recorded in history.

How then do the Arabians conceive of the origin of sensation? Avicenna expresses this very briefly: "Forma visi pervenit ad visum translucente reddente ipsam."[147] He rejects the theories of light-rays proceeding from the eye to the object, or of light-rays from the eye mixing with the light of the atmosphere.[148] After discussing the nature of light, of the transparent, of color, of reflex light, and other problems of experimental psychology (which merits for him the distinction of leader in this science), he concludes that, after all, sensation is a psychical process which takes place when the form of the object comes in contact with the sense.[149]

Alhazen treats at length of the origin of vision in his "De Aspectibus."[150] Light, he tells us, is the objective element in vision, and the sense of sight is the passive element. Every object of sight, and every part thereof, sends out in all directions direct or reflected light-waves.[151] These strike the eye. Alhazen then gives us an anatomy of the eye, pointing out the function and teleology of the various parts, all of which is, indeed, not original, but it is the first attempt at a systematic treatment of this subject.[152] It is in these discussions about the medium and about the sense-organ, that the scientific bent of the Arabian mind shows itself.

Since then, according to the author of "De Aspectibus," the surface of the eye is a convex lens, those light-waves only which strike it perpendicularly pass unbroken through the transparent body, the humor glacialis; all others are deflected. In a way, the light-waves form a

[146] Ibid.
[147] Winter, op. cit., p. 48.
[148] Ibid.
[149] Winter, op. cit., p. 45ff.
[150] Cf. Baeumker, Witelo, p. 232.
[151] Cf. Siebeck, Arch. f. Gesch. d. Philos., II, p. 415ff.
[152] Bauer, op. cit., p. 11.

pyramid, having the object as base and the eye as apex.[153] Nor is the mere color of the object carried to the eye by the light-waves; the form also, or rather the "intentions of form," such as size, figure and distance, are carried along.[154] In a word, a picture of the object, diminished in size, but proportionate, is thrown on the lens of the eye as on a mirror.[155] Alhazen, too, expressly rejects the εἴδωλον-theory of Democritus.[156]

The lens, however, as Alhazen admits, does not perceive. It merely receives the light and is affected thereby. The spiritus in the optic nerve converts this affection or pain into a perceptive quality, a knowledge-object; "(spiritus) dat virtutem sensibilem."[157] The spiritus is the medium between the light-ray in the lens and the perception which is completed in the "ultimum sentiens."[158] Here, then, is the whole process of vision in the words of Avicenna: "Visus perficitur humore crystalloide, qui est sicut aqua limpida quae recipit formas visibilium et reddit eas spiritui visibili et fit perfectio videndi in contractu nervorum concavorum, sicut cognitum est ex ejus chirurgia et ostensione dispositionis suae."[159]

But what is the position of the Arabians regarding the species sensibilis? Aristotle is said to have inspired their theory of sensation, hence we should expect some trace of his εἶδος-theory. Avicenna, treating of vision, says the τύποι of objects spread out in the transparent when this latter becomes actually transparent by the presence of light; they fall upon the eye as upon a mirror. This view he ascribes to Aristotle.[160] As we have seen above, both Avicenna and Alhazen speak of the form of the object

[153] Op. cit., 18ff.
[154] Op. cit., p. 28.
[155] Op. cit., p. 18.
[156] Op. cit., p. 28.
[157] Op. cit., p. 18.
[158] Op. cit., p. 29.
[159] Winter, op. cit., p. 26.
[160] Landauer, Ztschr. d. d. Morgenl. Gess., Bd. 29.

which is received by the sentient subject. Beyond this they are not very explicit. As Carra de Vaux says of Avicenna: "Notre philosophe admet qui'l y a, dans la vision, un fantôme de l'object, qui se trouve renvoyé par la lumière vers l'oeil; mais il ne précise pas davantage cette théorie que nous ne l'avons fait cidessus."[161]

But what is this form, this τύπος, of which they speak? According to Avicenna, the "formae sensibiles" are accidents of the object that affect the sense. For instance, the forms of sight are color, size, appearance, expression, etc.[162] These are impressed upon the sense together with the physical impression of light on the eye. Alhazen says the form which passes through the humor glacialis is a diminutive of the object. Both reject the theory of Democritus, of material particles emanating from the object. Nevertheless, they maintain that the form of the object is received by the humor crystalloidos as an image is received by water;[163] the virtus sensitiva perceives light "ex illuminatione" spiritus, and color "ex coloratione" spiritus.[164] But the humor crystalloidos, being material, can, indeed, receive a material impression, but not a representative "esse" from an object; the spiritus, which in its ultimate analysis is but air-like matter, cannot be colored except by material color. Moreover, the reception of this form is not only a *passio* in the broad metaphysical meaning of *passio*. Being of the nature of pain, it may even injure the sense-organ. Hence this reception can refer only to the reception of the physical impression by the organ. In reality, then, the τύπος of the Arabians is the material impression of physical qualities or accidents on the sense-organ. Avicenna expressly states as much when he enumerates the "formae sensibiles" of sight.[165] If over and above this they de-

[161] Op. cit., p. 212.
[162] Winter, op. cit., p. 28.
[163] Winter, op. cit., p. 26.
[164] Bauer, op. cit., p. 29.
[165] Winter, op. cit., p. 28.

mand that the true form of the object, or a representative *esse* of the object, be present to the subject in sensation, it comes, not from the object, but from some other source. And this, too, they admit. Avicenna maintains this form is produced in the mind, as it is in matter itself, from the world of intelligences.[166] The affection or change produced in the sense-organ by a quality of the object is but the occasion upon which the true form of the object arises in the mind from the world of intelligences.[167]

In fact, we perceive the object of sensation only indirectly; the direct or immediate object of the sense-faculty is the affection of our sense-organs. "Sentiens est aliquo modo sentiens seipsum, non corpus sensatum;"[168] or as Alhazen has it: "Color comprehenditur a sentiente ex alteratione formae corporis sentientis et ex ejus coloratione."[169] As we saw above, the spiritus sensibilis becomes colored, and the sense becoming aware of this, it indirectly becomes aware of the object which causes the change in the spiritus. Finally, the Brothers of Purity emphasize the same, when they say that sensation is nothing more than a change in the sense-organ, of which the soul becomes aware.[170]

The above is far from a complete account of the Arabian theory of sensation. It will, however, suffice to trace the development of the species sensibilis among Scholastics, and more is not intended. We have based this account on Avicenna, because of all Arabians, he exerted the greatest influence on European thought. Alhazen was drawn upon, because his "De Aspectibus" was the last word on optics among the Arabians.[171] It was popularized in the West by Witelo's "Perspectiva."[172]

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[166] Baeumker, op. cit., p. 472.
[167] Siebeck, Gesch. d. Psychol., I², p. 436.
[168] Winter, op. cit., p. 40.
[169] Bauer, op. cit., p. 47.
[170] Dieterici, op. cit., Bk. VII, p. 30.
[171] Arch. f. Gesch. d. Philos., II, p. 415ff.
[172] Baeumker, op. cit., p. 609.

There, too, its authority was unquestioned, as Roger Bacon testifies: "Plenitudo autem sapientiae istorum duorum philosophorum (Alhazen and Ptolemy) in libris manifestat, quod nullum falsum dicunt, et ideo ipsi in libris Aspectuum sunt de illis auctoribus, qui in omnibus sunt recipiendi . . . quod florem philosophiae explorant sine falsitate qualibet."[173] Though not a treatise on psychology, we can readily deduce Alhazen's theory of sensation from the "De Aspectibus."[174] The "De Differentia Spiritus et Animae" was introduced, because the theory of an internal medium is closely connected with the Scholactic theory of sensation in the eleventh and twelfth centuries. Finally, the Brothers of Purity, who were eclectic philosophers, show us the effect of the theoretical speculations of Arabian philosophers on the less educated Arabian public. We may, then, regard the above account as fairly representative of the Arabian theory of sensation.

From what has been recorded it appears that the Arabians misinterpreted Aristotle. He had contended that the τύπος in the sense was not material, but was a representative image of the object itself. The Arabians claimed Aristotle as their guide and authority; still the τύπος, according to them, as we have seen, could only be material. In order to maintain, in spite of this view of the τύπος, Aristotle's concept of knowledge, namely, the presence of the form of the object in the subject, they have recourse to Neo-Platonic emanationism; *i.e.*, the form of the object comes to the subject from the world of intelligences. Again, to preserve the terminology of Aristotle, they introduce a two-fold use of "form": as that which makes a thing to be what it is, and again, as a quality or an accident of the object. This merely adds to the confusion.

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[173] De Multiplicatione Specierum, III, 3 (ed. Bridges, p. 513).
[174] Bauer, op. cit., p. 39.

The representative view of sensation is another serious departure from Aristotle. The latter regarded the τύπος as an instrument or means in which we perceive the object immediately. The Arabians, however, regard the τύπος, *i.e.*, the change in the sense-organ, as the direct object of the sense-faculty, from which we conclude to the cause of this change, the external object.

We should, indeed, hesitate to speak of the Arabian theory as a species-theory—it differs so widely from the εἶδος-theory of Aristotle—were this not necessary to trace the modification and development of the species-theory in the Scholastics of the eleventh and twelfth centuries.

*THE SCHOOL OF CHARTRES.*—The School of Chartres in the twelfth century inaugurated a new line of thought in Western medieval philosophy.[175] By training and by inclination the representatives of this school were Platonists. John of Salisbury, who studied at Chartres, calls Bernard of Chartres "perfectissimus inter Platonicos saeculi nostri."[176] William of Conches repeatedly professes his adherence to "Plato, omnium philosophorum doctissimus."[177] William, in fact, wrote a commentary on Plato's Timaeus, which latter served as the basis for the metaphysics of the school.

This loyalty to Plato was due in a large measure to the humanistic reverence of the School of Chartres for all that was ancient and classical. "Dicebat Bernardus Carnotensis, nos esse quasi nanos, gigantium humeris insidentes, ut possimus plura eis et remontiora videre, non utique proprii visus acumine, aut eminentia corporis, sed quia in altum subvehimur et extollimur magnitudine gigantea."[178] Plato had been followed by the early Church

[175] Poole, Illustrations of Medieval Thought, p. 113.
[176] Metal., IV, 35.
[177] Cf. Dragmaticon.
[178] Metalog., III, 4.

Fathers; besides, the School of Chartres knew no other ancient classics in philosophy, since Aristotle was looked upon as a logician only.[179]

And yet the spirit of the School of Chartres was not Platonic. Nature study was one of its features. Paraphrasing the words of St. Paul, William of Conches says: "By the knowledge of the creature we attain to the knowledge of the Creator."[180] Besides, the ideology of William is quite different from that of Plato. Instead of rejecting knowledge obtained through the senses as useless and deceitful, William regards sense-knowledge as the foundation of all science and thought.[181] His psychology is not purely Platonic in spite of his praises of Plato. In the "Dragmaticon" we read: "Discernere ergo et intelligere animae est; sentire vero et similia, corporis."[182] But as a thorough-going Platonist he should have ascribed all activity to the soul and none to the body. The divergence between the School of Chartres and Plato was so marked that John of Salisbury says: "Egerunt operosius Bernardus Carnotensis et ejus sectatores, ut componerent inter Aristotelem et Platonem, sed eos tarde venisse arbitror, et laborasse in vanum ut reconciliarent mortuos, qui, quamdiu in vita licuit, dissenserunt."[183]

But the feature which makes the School of Chartres one of particular interest for our investigation is their attention to the study of physiology and anatomy.[184] It is in this connection that they develop the earliest traces of the materialistic aspect of the species sensibilis in the history of Scholasticism.

William of Conches, among the foremost of this school, treats of sensation in the fourth book of the "Dragmaticon."[185] De Wulf says of him: "Through the versions

[179] Ibid. IV, 3; cf. Annales de Philos. chret., XVI, p. 160.
[180] Phil., IV, 41.
[181] Poole, op. cit., p. 130.
[182] IV, 5.
[183] Metalog., II, 17.
[184] Cf. Clerval, Les Ecoles de Chartres, pp. 240, 320, ff.
[185] P. L. 90, c. 1127ff.

of Constantine the African, William became familiar with the physiological theories of Galen and Hippocrates, and endeavored to harmonize them with the process of sense-knowledge. It was Constantine who introduced into the schools of the West the study of the physiological concomitant of sensation; and the excessive attention paid to this aspect of knowledge resulted in almost completely losing sight of its distinctly psychical aspect.''[186] To verify these words we need but open the ''Dragmaticon.''[187] The brain, according to William, is made up of three parts ''in prora, in medio, et in puppi.'' The first part, called the ''phantastica'' or ''visualis,'' is the seat of vision and intelligence; ''haec calida et sicca est, ut formas rerum et colores attrahat.'' The middle part, the ''logistica,'' is the seat of reason and judgment; ''estque calida et humida ut melius discernendo proprietatibus rerum se conformet.'' The third and last part is the ''memorialis''; ''ista est frigida et sicca ut melius retineat; frigidi et sicci est constringere.'' These facts, he claims, have been proved by the experience of persons who have been injured in these several parts. This whole description William has from Constantine the African.[188]

So, too, he gives us a process of sight taken almost verbatim from Constantine. After describing the anatomy and function of the eye, he continues: ''Cum igitur animalis spiritus per nervos a cerebro prodeuntes, et ad oculos usque pervenerit, exiens si aliquem exteriorem splendorem, vel solis, vel alterius, receperit, usque ad obstaculum dirigitur, quod offendens per ipsum se diffundit, formisque illius et coloribus informatur per oculos, et per phantasticam cellam ad logisticam cellam transit, visusque efficitur.''[189]

Hearing he explains in a similar manner: ''Cum aer naturalibus instrumentis percussus formam vocis accep-

[186] Op. cit., 185.
[187] Bk. IV, V.
[188] Cf. Soury, Systéme nerveux central.
[189] Op. cit.

erit, exiens, primam partem aeris quam reperit, simili informat forma, et illa aliam, donec ad aures perveniatur ad modum sicci et concavi; cui resonanti excitatur ille spiritus animalis, descendensque ad aures per quosdam nervos, informat se simili forma, sicque informatus ad logisticam cellam revertens, auditum operatur.''[190] The process of the other senses he does not record, but says they proceed in a manner similar to vision and hearing.

At first sight we are unable to determine which influence is predominant in this theory of sensation, that of St. Augustine or that of the Arabians; evidently both are present. According to St. Augustine, as we have seen, the sense goes out to the object of sensation. William of Conches rejects the theories of the Stoics and the Atomists, and adds: ''Nobis vero illa placet sententia, quod animalis spiritus usque ad rem pervenit.''[191] Substituting ''sense'' for ''animalis spiritus,'' this is the same as St. Augustine's view. Both emphasize the activity of the subject, and the corresponding passive character of the object. Again, in William's theory as in that of St. Augustine, the sense or spiritus is informed, and this ''informatio'' comes from the object; ''formisque illius et coloribus informatur per oculos.'' Of hearing, William says: ''Spiritus animalis . . . informat se simili forma.'' Recalling now the distinction, which was made when speaking of St. Augustine, between the subject as the active cause, the object as the material cause, and the organ as the instrument of the ''informatio,'' it is equally justifiable to say the spiritus is informed by the object (passively at least) through the organ, or to say the spiritus informs itself with a form like to that of the object.

The similarity, then, between the Augustinian theory of sensation and that of William of Conches is striking.

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[190] Ibid.
[191] Ibid.

But on the other hand we observe a decided divergence between the two. William emphasizes the physiological process that accompanies sensation; St. Augustine scarcely mentions this. The localization of psychical faculties in the brain, the anatomy of the sense-organs, the definite rôle ascribed to the nerves and to the spiritus —these are the elements in William's theory of sensation which are not due to St. Augustine, but rather to the Arabians.

Moreover, for St. Augustine the form which informs the sense, is truly an image of the object; not so in William's theory. He speaks of forms and colors as complementing each other; he even uses "forma" and "figura" promiscuously in the Dragmaticon. Besides, if the "phantastica" of the brain is warm and dry "ut formas rerum et colores attrahat," and if the "logistica" is warm and moist "ut . . . proprietatibus rerum se conformet," this is evidence that the "forms" of which he speaks are, in the first place, accidents or qualities of things and not their essence; secondly, they are material, because attracted by a material brain, or, because a material brain conforms itself to them.

Finally, however subtle and fine the spiritus may be, it is material. If, then, this is informed, or informs itself, this can be only by material forms. The Arabian view of the species or τύπος is evident here. As that view can hardly be called a species-theory, even so Turner says of William of Conches: "Rejecting the theory of forms mediating between object and subject, he devotes his attention to what we should call the physiological aspect of the problems of psychology."[192]

The relation of William of Conches to the Scholastics of the thirteenth century regarding the theory of sensation is analogous with that of Democritus to Aristotle; he observed the facts, but lacked the metaphysics to explain them.

[192] Op. cit., p. 296.

William of Conches is not alone in this materialistic aspect of the species sensibilis. To quote another representative of the School of Chartres, Bernard Sylvester says in his "De Mundi Universitate":[193] "Molle et deliquatum ad creationem cerebri visa est delegisse, ut in liquido possent facilius rerum imagines insidere. . . . In sincipite provisum est, phantasia rerum formas anticipet et rationi renunciet quae viderit universa. In occipitis reductiore thalamo memoria conquiescat ne, si primo visionum jacuisset in limine, figurarum frequentissimis perturbetur incursibus."[194] So much is clear from these words: the images which are impressed on the brain must be material; "form" is used synonomously with "figure"; in short, then, we have an image-theory which is less foreign to the εἴδωλον-theory of Democritus than to the εἶδος-theory of Aristotle.

John of Salisbury, too, "is apparently influenced by the physiological method of William of Conches."[195] He is, in the main, Platonic. Still he says: "ars sive scientia originem trahit a sensu."[196] But he is more important as a chronicler than as an original thinker.

William of Thierry emphasizes the same line of thought. The spiritus, the development of which he traces very minutely in his "De Natura Corporis et Animae,"[197] is "quaedam vis animae, per quam virtutes suos actus operantur." Nevertheless, it is corporeal. The spiritus visivus proceeds from the brain through the optic nerve to the tunica vitrea of the eye, and, by stimulating this tunica, makes the lens radiant. Passing then to the surface, the spiritus mixes with the lighted air, receives the colors of objects, and conveys the impression or change to the crystal lens.

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[193] Barach, op. cit.
[194] Op. cit., p. 64.
[195] Turner, op. cit., p. 300.
[196] Metalog., IV, 20.
[197] P. L., 180, c. 95ff.

As soon as the mind perceives this change of the crystal lens through the activity of the spiritus visivus, it perceives the color, form, size and motion of external objects. "Aer exterior visibilium colorum fert mutationes et spiritus eamdem menti infert mutationem. Omnis enim sensus sentientem transmutat quodammodo in id quo sentitur." In hearing the "tactus aeris pervenit ad operimentum nervorum . . . ibique ipsum operimentum in naturam tacti aeris transmutatur. Sunt enim similia, quia natura utraque aeria. Haec autem permutatio ad mentem ducitur per nervos, mens autem discernit naturam intromissae vocis, et sic fit auditus."[198]

This theory of William of Thierry seems less fantastic than some others of this age. The spiritus, considered as a power of the soul, would be less objectionable, but he at once calls it corporeal and thereby returns to the old Arabian doctrine. Besides, Arabian subjectivism is noticeable. The mind perceives directly the states of bodily affection and only indirectly, the external object. In this regard the theory bears some resemblance to that of the early Peripatetics and to that of Galen. Adelard of Bath must also be mentioned in this connection, because in his "Quaestiones Naturales" he gives expression to similar views regarding sensation.[199] Like all the philosophers of his time (ca. 1100), he is a Platonist. Chalcidius, Boethius, and St. Augustine are his authorities. Hence his theory of sensation, indeed, his whole psychology, is a compilation from their works. The origin of sight he explains as did Plato; concerning the origin of hearing he follows Boethius.[200] Still we find introduced "a theory on the localization of mental functions and a number of physiological informations coming directly from Galen and Hippocrates . . . borrowed by Adelard from Constantine the African."[201] In his "De

[198] Ibid.
[199] Baumgartner, Die Philos. d. Alanus de Insulis, p. 18.
[200] Willner, Adelards De eodem et diverso, p. 43.
[201] De Wulf, op. cit., p. 187.

Eodem et Diverso'' Adelard speaks rather disparagingly of sensation as a faculty of knowledge.[202]

*THE SCHOOL OF ST. VICTOR.*—The most important school of the twelfth century, next to that of Chartres, was the School of St. Victor. The Augustinian doctrines concerning the inferiority of matter and the corresponding importance of spirit have ever been fundamental in schools of mysticism. This, too, is true of the School of St. Victor. Hugh of St. Victor considered body and soul to be more closely united than was warranted by the traditional psychology, but he failed to find a suitable formula to express this union.[203] Instead of adopting a new formula, he attempted to improve upon the old one of Plato. He maintained that the union between body and soul is a strained and unnatural one, and that, therefore, the soul is impeded in its activity by its union to the body. However, he plainly seemed dissatisfied with this explanation.[204] Richard of St. Victor is the first to call the union of body and soul a natural union: ''Econtra vero proprium est humanae naturae pluralitatem substantiarum habere in unitate personae. Nam quod humana persona in simplicitate substantiae quandoque invenitur, non de naturae ipsius conditione sed de conditionis ipsius corruptione fore deprehenditur.''[205]

According to Hugh of St. Victor, the number of the senses is determined by the difference of the sense-organs. Hence he concludes that after death all sensation will be one and the same, and while he expresses the opinion that sensation might be possible even now without the organs of sense, he at the same time concedes his uncertainty about this.[206]

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[202] Willner, op. cit., p. 45.
[203] Ostler, Die Psychologie d. Hugo v. St. Victor, p. 62.
[204] Ibid.
[205] De Trinit., IV, 25 (Ostler, op. cit., p. 89).
[206] Sacram., 2, XVI, 3.

Such views about sensation, added to the Platonic character of Hugh's psychology[207] and the tone of mysticism in all his works, led Hauréau[208] to doubt the authenticity of the interesting little work, "De Unione Corporis et Spiritus;" for, in this work we find a rather complete account of the species-theory. But today it is generally acknowledged to be an authentic work of Hugh of St. Victor.

The passage which refers to the species is the following: "Ipsa vis ignea, quae extrinsecus formata sensus dicitur, eadem forma usque ad intimum traducta imaginatio vocatur. Forma namque rei sensibilis per radios visionis foras concepta, operante natura, ad oculos usque retrahitur, atque ab eisdem suscepta visio nominatur. Deinde per septem oculorum tunicos et tres humores transiens, novissime purificata et collata introrsum ad cerebrum usque traducitur, et imaginatio efficitur. Postea eadem imaginatio ab anteriore parte capitis ad mediam transiens, ipsam animae rationalis substantiam contingit, et excitat discretionem in tantum jam purificata et subtilis effecta, ut ipsi spiritui immediate conjungatur; veraciter tamen naturam corporis retinens et proprietatem, ut constat quod scriptum est; Quod natum est ex carne, caro est (Joan. III.). . . . Ergo imaginatio nihil aliud est quam similitudo corporis, per sensus quidem corporeos ex corporum contactu concepta extrinsecus, atque per eosdem sensus introsum ad partem puriorem corporei spiritus reducta, eique impressa."[209]

From this it appears that Hugh considers the sense a "vis ignea" which is informed by an external object. That an image of the object be in the subject is a condition for all knowledge.[210] Hence sensation is essentially a passive process by which the form of the object is im-

[207] Cf. Mignon, Hugues de St. Victor, p. 102.
[208] Hugues de S. Victor, Nouvel Examen.
[209] P. L., vol. 177, c. 387.
[210] Didascal., I, 2.

pressed, first on the medium, and then on the sense-organ. Sight is an exception to this general rule, because the light-rays go out from the eye.

Certainly the whole passage reads much like St. Augustine, and his influence is undeniable. The physiological factor of sensation is not uppermost, as we have seen it in William of Conches and in others of the twelfth century. Moreover, the distinction between the process of sight and that of the other senses was observed even in St. Augustine, though Hugh expresses this more emphatically.

But there are other features in this theory of Hugh, which are not based on St. Augustine. In the first place, the form in the sense is material as is evident from Hugh's own words: "Veraciter tamen naturam corporis retinens et proprietatem." The purification which this form undergoes by passing through material parts of the eye, and the effect which it produces on a corporeal spirit, are equally foreign to Augustinian thought. These, as well as the passive character of sensation, the function of the spiritus, and the physiology and teleology of the sense-organs are evident traces of Arabian influence. Siebeck says of Hugh of St. Victor: "In der Art, wie er sich ihr (der Sinne) Verhältniss zur Wahrnehmung denkt, stimmt Hugo mit der allgemeinen Anschauungsweise überein, welche das Mittelalter über diesen Punkt besass. Er denkt sich die Empfindungsinhalte als von aussen in das Organ hereingekommene Bilder der Dinge (intentionale Species) und zwar bestimmter als eine Art Abdrucke derselben im Pneuma (der spiritalis natura)."[212] We take no objection to the last sentence. But the former indicates the loose concept which Siebeck has of the species sensibilis. We have already observed a decided difference between the Augustinian concept of these "Bilder" and that of Hugh, and we shall observe an

[212] Gesch. d. Psychol., I², p. 418.

equally marked divergence from Hugh's concept in the later Scholastics. No wonder that Siebeck finds traces of Democritus in the Scholastic theory of the species sensibilis!

In the twelfth century another work, "Liber de Spiritu et Anima," was often ascribed to Hugh of St. Victor; others ascribed it to St. Augustine.[213] The work is a compilation drawn mostly from the writings of those two renowned authors. Now it is commonly ascribed to Alcher of Clairvaux. The psychology of the "De Spiritu et Anima" is purely Augustinian. But, as Ritter observes,[214] it is remarkable how much attention is given to the union of body and soul. This union is described as a friendly one, though the body impedes the activity of the soul. The soul is in a prison, but "it is devoted to its prison."[215] Then, too, the localization of the psychical functions and the rôle of the spiritus are discussed at length.

Concerning the species sensibilis, the "Liber de Spiritu et Anima" offers nothing new; it restates the views of St. Augustine and of Hugh of St. Victor. The senses receive the corporeal forms of bodily objects. These are impressed on the spiritus which is not a body but similar to a body.[216] The soul gathers these "visibiles actualium formas per sensuum passiones."[217] Again we read: "Sensus est passio animae in corpore ex qualitatibus extra accidentibus."[218] All this points to the influence of Arabian thought. Though it is not new, it deserves a mention, because, under the reputed authorship of St. Augustine or of Hugh of St. Victor, this work of Alcher was regarded very highly and was commonly used in the twelfth century as a textbook of psychology. Hence the views

[213] Cf. De Wulf, op. cit., p. 202.
[214] Gesch. d. Philos., VII, p. 591.
[215] De Wulf, op. cit., p. 202.
[216] C. X.
[217] C. XI.
[218] C. XXXVIII.

here expressed were firmly rooted in the philosophy of the age. That Alcher accepted the faulty Arabian concept of *form* when speaking of sensation, is confirmed by the fact that even Alanus de Insulis, at the end of the twelfth century, speaks of accidental and essential forms, *i.e.*, properties.[219]

The materialistic aspect of the species sensibilis, as we have traced it, was the result of engrafting Arabian physics and physiology upon Platonic or Augustinian psychology. It was characteristic of all the middle ages to revere authority and tradition, and to accept a ready-made solution of any problem in preference to formulating a new solution. Now, the psychology of Plato had become sacred both because of its ancient classical fame, and because it had been followed by all the early Christian schools. Moreover, to the Scholastics of the twelfth century no other classical psychology was known. As we observed when treating of the School of Chartres, Aristotle was, indeed, regarded highly as a logician and as a natural scientist, but not as yet, as a psychologist or metaphysician. Hence these early scholastics accepted the psychology of Plato in spite of their own convictions. We have seen that some of the above-mentioned philosophers were not satisfied with all the principles of Platonic psychology, but they dared not offer a substitute.

On the other hand, as Barach[220] observes in his introduction to the "De Motu Cordis" by Alfred of Sareshel, we notice in the twelfth century a tendency to find a material basis for psychical and vital phenomena. Contact with Arabian learning gave the first impetus to this new field of thought. But here, too, the twelfth century philosophers were not original; they accepted the Arabian science *in globo*.

Together with that, they accepted the Arabian view

[219] Baumgartner, Alanus de Insulis, p. 53.
[220] Op. cit.

of sensation. No longer content with the psychical aspect of sensation which neglected or disregarded altogether the objective element, they went to the opposite extreme by emphasizing unduly its physical and physiological concomitants. In consequence of this, they lost sight of the psychical nature of sensation. The old terminology was, indeed, retained but it was interpreted in a materialistic sense. The form, image, or species in the sense, meant little more than the physical impression on the material organ of sense.

As a further consequence of this materialistic aspect of the species, these philosophers, as we have seen, favored the representative view of sensation which was prevalent among the Arabians. Sensation meant simply the awareness of the affection from without, or of the change in the sense-organ. The species, if such it may be called, became the direct object of sense-knowledge, instead of a means to this knowledge; the external object was known only mediately, as a deduction from the impression on the organ. The species was considered the *principium quod,* instead of the *principium quo cognitionis.*

This materialistic aspect of the species sensibilis remained uppermost until the works of Aristotle in the original Greek were made known to the Scholastics, *i.e.,* until the early decades of the thirteenth century. Thereupon this view gave way, not suddenly, but gradually, to the psycho-physical aspect of the species sensibilis.

## CHAPTER III.

## THE PSYCHO-PHYSICAL ASPECT

### OF THE

### *SPECIES SENSIBILIS.*

The Latin translations of all the works of Aristotle together with Arabian commentaries suggested to the Scholastics of the thirteenth century new solutions to problems of psychology. This not only added to their fund of knowledge, but likewise increased the difficulty of unifying or systematizing it. Instead of the two heterogenous elements which we have noticed in the psychology of the twelfth century, we now find four more or less distinct psychological systems; for, together with Aristotelianism, Neo-Platonic emanationism was added to the traditional Augustinian and the materialistic Arabian tendencies. In the early decades of the thirteenth century these were still unassimilated. To harmonize them and weld them into one complete system was the aim of every philosopher, with the result that sometimes one, sometimes another view predominated. One by one, however, the contradictory elements were eliminated. Thus, even the most loyal Platonists of the thirteenth century admitted the active influence of the object in sensation, whereas earlier Platonists had contended that the object was merely the occasion which aroused the activity of the sense. It is likely that this change was brought about by the Arabians who compromised by accepting Plato's view regarding the origin of "sapientia," and Aristotle's view regarding the origin of "scientia."[221] Other compromises were effected in a similar manner.

The distinctive feature of the psycho-physical aspect of the species sensibilis is the influence of Aristotle. At first this is far from preponderant, though it is distinctly

[221] Cf. Manser, Jahrb. f. Philos, u. spek. Theol., Bd. 26, p. 316.

noticeable. Just as many doctrines of Plato and Aristotle had been foreshadowed in Pre-Socratic philosophy, even so the philosophers of the twelfth century had hinted at many doctrines developed and crystalized in the thirteenth century.[222] However, just as Humanism opened new fields of thought in the fifteenth century, so, too, the introduction of Aristotle brought a new point of view to the philosophy of the thirteenth century. There was not a break in the development, not a difference of standard or purpose in philosophy, but new means and new material suggested new solutions of old problems.

*ALFRED OF SARESHEL.*—The first evidence of this psychophysical view is offered by the "De Motu Cordis" of Alfred of Sareshel.[223] Written between 1205-1215, this is among the earliest works of Scholastic philosophy which show traces of the Greek-Latin translations of Aristotle's works including the "De Anima."[224] Nevertheless, the predominant note is not Aristotelian psychology, but rather Arabian physiology and anatomy.

Alfred boldly rejects all traditional, that is, all Augustinian psychology. Occasionally he "borders on the materialism of the ancient Grecian physicians."[225] The "warmth," of which he makes mention so frequently, is material, since it affects the blood, causing nutrition, growth, etc.[226]

Again Neo-Platonic emanationism, as expressed in Avicebron's "Fons Vitae" and in the "Liber de Causis," is apparent throughout the work.[227] Thus he says the soul is not created; "anima e quieto sempiterno nata."[228] He likewise presents a twofold concept of the soul: "In se enim considerata, substantia est incorporea, intellec-

[222] Cf. Rev. Thomiste, '97, p. 723.
[223] Barach, op. cit.
[224] Philos. Jahrb., 14, p. 478.
[225] De Wulf, op. cit., p. 276.
[226] Barach, op. cit., p. 91.
[227] Op. cit., p. 25.
[228] Op. cit., p. 103.

tiva, illuminationum quae a primo sunt, ultima relatione perceptiva. . . . Relata vero anima perfectio est corporis organici.''[229] Still, being imbued with ''Arabian tendencies in physiology and psychology,''[230] he attempts to localize this ''substantia incorporea,'' not in the brain, but in the heart.[231] His proof is insufficient; but we are interested in the fact that such a doctrine could have been sincerely believed, more than in the proof for this belief.

Alfred has little to say regarding the origin and progress of sensation considered objectively. But we find many allusions to the subjective element, the mechanism of the senses, though he does not treat of this either *ex professo*. The soul as the ''perfectio prima corporis'' is, of course, the principal cause of sensation. And, since the heart is the seat of the soul, ''ipsum (cor) igitur et sensus et motus et vitae primum erit instrumentum.''[232]

However, sensation is not an act of the soul alone. ''Neque anima vel corpus dormit vel digerit, ratiocinatur vel sentit, sed animal. Non ergo animae vel corporis propria hujusmodi passio vel actus aliquis, sed animalis.''[233] This passage might be taken to indicate that Alfred had grasped Aristotle's theory of sensation, or one of its features, viz., the cooperation of body and soul. But his view is based, not on the peripatetic doctrine of the substantial union of body and soul, but on a pantheistic emanationistic concept of the soul. The soul is to the body what God is to the world, ''das Formprincip.''[234] Emanation or irradiation is his watchword.

In the doctrine of the *spiritus* Alfred is very similar to Costa ben Luca. He distinguishes between the spiritus animalis and the spiritus vitalis.[235] The purpose of the spiritus is to receive impressions immediately from

[229] Op. cit., p. 83.
[230] De Wulf, op. cit., p. 276.
[231] Barach, op. cit., p. 95.
[232] Op. cit., p. 99.
[233] Op. cit., p. 109.
[234] Op. cit., p. 93ff.
[235] Op. cit., p. 95.

the soul, and to affect immediately the body. Hence it is nearly material and nearly spiritual. "Anima enim ex sanguine spiritum medio calore producit, productum vero sine medio ad operationem disponit."[236] "Materia hujus (spiritus): subtilissima et parvissima pars sanguinis ab epate ad cor ascendentis. . . . Ex aere ignito videtur constare."[237] This is the spiritus vitalis. The spiritus animalis which operates motion and sensation is even more subtle and pure.[238] It arises out of the spiritus vitalis which, coming to the brain by irradiation, is there purified and becomes spiritus animalis.[239] The brain is like a polished mirror; the spiritus vitalis strikes this mirror, and the reflection which is purer, *i.e.*, less material, than the object reflected, is the spiritus animalis. "Ex (ejus) raritate et concavitate" the brain is the principal seat of the spiritus.[240] From there it passes to the other organs through the nerves. The brain, therefore, controls sensation, motion, etc. "Sensus et motus phantasiae, aestimationis, rationis, memoriae regimen tenet."[241] Still the *causa principalis* of sensation is the soul since "a corde quoque ad cerebrum ad eundem effectum (irradiationem spiritus) venae directae sunt; his enim intersectis non sentit animal."[242] The *causa propria* of sensation is the spiritus; the brain is the "spirituum . . . domicilium."[243] When the head is diseased the senses are languid, when the heart is diseased the senses cease.[244]

Finally, "nervi vero instrumenta sunt sentiendi et motus."[245] Alfred distinguishes three kinds of nerves: sensory nerves, and these are "subtilissimi"; motory nerves, these are "grossiores"; and a third kind which

[236] Op. cit., p. 107.
[237] Op. cit., p. 96.
[238] Op. cit., p. 98.
[239] Op. cit., p. 99.
[240] Ibid.
[241] Op. cit., p. 87.
[242] Op. cit., p. 112; cf. p. 93 and p. 95.
[243] Op. cit., p. 108.
[244] Op. cit., p. 99.
[245] Op. cit., p. 107.

performs both functions, "et hi medii in quantitate sunt."[246]

This leads us to Alfred's definition of sensation: "Est enim sensus perceptio impressionis aequalitatem supergredientis."[247] In a fragment of another work likewise published by Barach, Alfred says: "Oportet enim ut instrumentum exteriorum applicatione aliquo modo afficiatur; quam affectionem percipiens anima sentit."[248] Alfred, then, considers affection from without as essential for sensation. But this is not an affection of the soul; it is an affection of the "instrumentum," the sense-organ. The soul is purely active, since it merely perceives this impression.

Alfred's view of sensation resembles that of Plotinus who rejected the impression of forms;[249] hence the absence of a species-theory in Alfred. That the body is affected in sensation could easily be explained by the physics and physiology of the Arabians, with which Alfred was conversant; that the soul becomes aware of this, he could ascribe to the vague and mysterious function of the *spiritus*. Moreover, the soul is "illuminationum quae a primo sunt, ultima relatione perceptiva."[250] From this we may assume that Alfred accepted also the other view of Plotinus regarding sensation, namely, that the form enters the mind from the world of intelligences. Alfred, then, had no need for anything like a species sensibilis.

That the works of Aristotle exerted an influence on Alfred may be conceded; some would even find a similarity of style between the two.[251] But it is apparent that the influence of Arabian science and of Neo-Platonism, as presented by Arabian commentators, is uppermost. However, the "De Motu Cordis" is anything but an unified sys-

[246] Op. cit., p. 108.
[247] Op. cit., p. 103.
[248] Op. cit., p. 114.
[249] Siebeck, Gesch. d. Psychol., I², p. 323.
[250] Barach, op. cit., p. 83.
[251] Op. cit., p. 31.

tematic whole. Hauréau calls it "écrit vraiment curieux où les plus décevantes, les plus frivoles conjectures sont naivement recommandées au nom d'une science imparfaite."[252]

Another unfortunate feature of the "De Motu Cordis" is the utter disregard for all traditional views. Owing to this defect more than to any other, its influence on the philosophical thought of the thirteenth century was minimal.[253] As Barach observes: "Man kann von Nachwirkungen der Schrift De Motu Cordis im eigentlichen Sinne des Wortes nicht sprechen. Die in ihr entwickelte anthropologische Gesammtansicht scheint spurlos vorübergegangen zu sein."[254]

*WILLIAM OF AUVERGNE.*—One of the most important indirect effects of Arabian philosophy on the Christian schools of Europe was the revival of interest in psychology, particularly in the problem of knowledge.[255] The Arabian Neo-Platonic doctrines of emanationism, of phantastic intelligences; and other such theories of knowledge had to be combated. If the world of spiritual intelligences is not the source of knowledge, what, then, is its origin?

This was the problem of philosophy that confronted William of Auvergne. William knew all the works of Aristotle, though only from translations. He was, likewise, conversant with most of the important works of Arabian and Jewish philosophers;[256] he speaks of Avicebron as "unicus omnium philosophantium nobilissimus."[257] But the Christian adaptation of Aristotle was still in its first stage. The genuine Aristotle was not yet

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[252] Hist. de la philos. scolast., I² p. 65.
[253] De Wulf, op. cit., p. 276.
[254] Op. cit., p. 65.
[255] Baumgartner, Die Erkenntnisslehre d. Wm. v. Auvergne, p. 10; cf. Ueberweg, II. p. 279.
[256] Baumgartner, op. cit., p. 5.
[257] De Wulf, op. cit., p. 273.

distinguished from Arabian accretions. The Stagirite was respected, indeed, as the founder of peripatetic philosophy, as a man of great knowledge especially in the natural sciences, but not so much as a metaphysician or psychologist.[258] As a consequence, William combated the Arabian doctrines concerning the origin of knowledge by means of the traditional Augustinian psychology. Not that he gives us a unified systematic treatise on the theory of knowledge, but, dispersed throughout his works especially his "De Anima," we find many questions relating to this problem presented and discussed.

In all essentials the psychology of William of Auvergne is Augustinian.[259] The influence of Aristotle is noticeable in new problems discussed and in a new terminology, rather than in a new line of argumentation. He defines the soul as "perfectio corporis physici organici vitam habentis," but he adds: "Non intret autem in animum tuum, quod ego velim uti sermonibus Aristotelis tamquam authenticis ad probationem eorum quae dicturus sum."[260] On the contrary, he places himself with the psychologists of former centuries, when he defines the soul as "substantiam viventem, incorpoream, intelligentem, et scientem per se et proprie, totumque hominem, hoc est omnia interiora hominis et exteriora, regentem."[261]

The nature and qualities of the soul are, according to William, directly opposed to those of the body. Hence body and soul are complete independent substances.[262] While he speaks of the relation between body and soul as that of matter and form, he destroys the significance of these terms when he calls the body the house of, the instrument of, the vessel containing, the soul.[263] The

[258] Baumgartner, op. cit., p. 10.
[259] Werner, D. Psychol. d. Wm. v. Auvergne, Sitzungsber. d. wiener Akad., vol. 73, p. 263.
[260] Baumgartner, op. cit., pp. 11 and 12; (De An., I, 1, p. 65.).
[261] Ibid; (De An., I, 3, p. 67).
[262] Op. cit., p. 13; (De An., I, 2, p. 66).
[263] Ibid. (De An., II, 9, p. 125).

union is effected "per contactum virtutis." "Animam rationalem sive humanam esse substantiam activam et agentem in semetipsam et in corpus."[264]

The soul is absolutely indivisible; there is no division of faculties. Hence all activity, intellectual, sensible, and vegetative, has for its subject the immaterial soul. "Ipsae enim operationes, quae fiunt per corpus, ut ostensum est tibi in praecedentibus, ipsius animae humanae verissime ac propriissime sunt, sicut est loqui, disputare et etiam, quamquam indignetur Aristoteles, texere et aedificare."[265] These activities of the soul depend on the body, not for their existence, but for their activity; the organs of the body are necessary conditions, means, or instruments of the soul. "Ista indigentia (corporis) est solummodo quantum ad operationes hujusmodi peragendas, quemadmodum cytharedus indiget cythara quantum ad operationem cytharizandi exercendum, non autem quantum ad esse vel existere suum."[266] Essentially sensation, for instance, is an emanation from the soul, just as the soul is an emanation from the *Fons Vitae,* from God.[267] However, "potentia hujusmodi non exit in actum per se ipsam solum, imo necessarium habet instrumentum videndi."[268]

All knowledge implies the assimilation of the object by the subject in some manner, and this, too, is true of sensation. "Omnis cognitio nostra assimilatio quaedam est ad ipsa cognita secundum eam vim vel partem, per quam cognoscuntur; ut si per sensus cognoscuntur, assimilatio erit sensus ad illa, ut evidens est in tactu et visu et in omnibus sensibus."[269] This assimilation takes place in the organ of sense; the sense is affected and changed by the impression from the object. "Si sit visio albi, erit assimilatio albi et oculi et albatio oculi, sic

[264] Op. cit., p. 14; (De An. V, 8, p. 124).
[265] Op. cit., p. 24; (De An., III, 11, p. 102).
[266] Cf. Hauréau, op. cit., II, p. 155 (De An., XXIII, 5).
[267] Baumgartner, op. cit., p. 18.
[268] Op. cit., p. 24; (De An., V. 23, p. 149).
[269] Op. cit., p. 28; (De Un., II, p. 1, c. 14, p. 821).

visio lucidi illuminatio oculi.''[270] The change in the organ of sense is produced by the impression of images or forms. ''Sensus enim . . . est potentia habens formas sensibiles sive similitudines earum.''[271] There is no sensation possible without this action of the external object on the sense organ; ''corpus enim agens in corpus per formas sensibiles.'' ''In organo enim uniuscujusque sensus necesse est imprimi similitudinem ejus, quod per ipsum sensibiliter cognoscitur seu sentitur.''[272] This change of the organ is in the nature of a passio, a state of being acted upon from without. Not that the soul is acted upon; this he denies, because the soul, being immaterial, cannot be affected by matter.[273] But the material organ of sense is acted upon by the object. This *passio*, however, William interprets to mean merely the reception of physical qualities of the object, just as *potentia* for him means merely the aptitude of receiving physical qualities of objects. ''Si virtus intellectiva non esset in corpore humano nisi quemadmodum receptibilitas formarum visibilium aut quemadmodum in speculo politio et tersio.''[274]

But how do these images of forms come in contact with the sense-organs? William offers no solution; he seems to imply that there is no difficulty. The doctrine of a medium between object and sense is useless: ''Inter sensus et sensibilia non est necessaria virtus media agens in sensus, quae faciat sensata sensibilia, quae potentia sunt in organis sensuum, exire in effectum et ea esse in effectu; sed ad hoc sufficiunt sensibilia quae extra sunt.''[275]

All this, the impression, the assimilation, the medium, if there be one, is only the physical element of sensation,

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[270] Op. cit., p. 29; (De retrib. sanct, Tom. I, p. 317).
[271] Op. cit., p. 28; (De An., III, 4, p. 207).
[272] Op. cit., p. 29; (De An., V. 5, p. 119).
[273] Ibid.
[274] Ibid. (De An., V, 5, p. 120).
[275] Hauréau, op. cit., II[1], p. 152; (De An., IV, 7).

only a necessary requisite. The real act of sensation is purely psychical, because it implies perception, judgment, and knowledge. "Verum nemo adhuc eo usque deliravit, ut diceret nervum vel spiritum visibilem aliquid cognoscere vel de aliquo judicare."[276] It is necessary that sensible forms be received, but "receptibilitas formarum visibilium non facit oculum potentem videre sive aptum vel idoneum ad videndum."[277] We require moreover "cognitionem sive judicium quod per illam (formam sensibilem) fit tamquam per signum."[278] "Quod enim colores apprehendit vel percipit et de eis judicat eosque ab invicem dijudicat et discernit, hoc proprie ac vere ac solum videns est."[279] The soul therefore sees and hears; the soul is the subject of sensation. The impression of forms, on the sense organs, the change in the organs—these are but the occasion that arouses the soul to activity. "Levissime commotus (a rebus) earum species ipse sibi ipsi semetipso format."[280]

In the last analysis, therefore, William of Auvergne's theory of sensation is purely Augustinian.[281] The soul knows or sees itself in sensation as in every process of knowledge; the bodily organs are but instruments arousing the soul to self-activity; matter is opposed to spirit; body and soul are independent substances—what is this but Platonic dualism? From his terminology we might infer that William followed Aristotle; indeed, he accepts a number of Aristotle's views, or fragments thereof.[282] But he fails to grasp Aristotle's line of reasoning, fails to see the complete synthesis and interdependence of all the parts. Thus, he knows no animated organ; his concepts of *passio* and *potentia* are material; form or *imago,* too, is for him merely a physical quality of

[276] Baumgartner, op. cit., p. 30; (De An., I, 5, p. 70).
[277] Op. cit., p. 31; (De An., V, 5, p. 120).
[278] Op. cit., p. 32; (De An., V, 5, p. 69).
[279] Ibid. (De An., V, 6, p. 121).
[280] Cf. Turner, op. cit., p. 326.
[281] Baumgartner, op. cit., p. 33ff.
[282] Baumgartner, op. cit., p. 6.

an object; and the rôle of the medium in Aristotelian psychology he misinterprets and consequently rejects.[283] This materialistic interpretation of Aristotle's metaphysical concepts is easily explainable, almost pardonable. William knew no Greek; translations from the Arabian were his principal sources and these were materialistic. In fact, even the Greek peripatetics themselves whom the Arabians studied, had fallen from the metaphysical heights of their great teacher.

Neo-Platonic elements, also, are evident in William's theory of sensation; as, for instance, the views bordering on emanationism.[284] Sensation emanates from the the soul; the soul is on the horizon between the material and the immaterial world. These tendencies are, likely enough, drawn from the *Fons Vitae,* and from the *Liber de causis,* which was, after Aristotle, the most influential authority for medieval philosophers.

Arabian philosophy is responsible for another element in the theory of sensation as presented by William of Auvergne, viz., the physiological element.[285] Though this feature is not as prominent in his works as it is in those of the Arabians, or even of some Christian philosophers of the twelfth century, *e. g.,* William of Conches, still, he makes mention of the localization of the faculties in the brain, of the soul in the heart, of the formation of the eye, of the upper and lower limit of sensation, and of the stimulus of sensation.

To conclude, William of Auvergne is a "typical representative of the period of transition and elaboration to which he belongs."[286] He knew Arabian Aristotelian philosophy, but its merit was not yet definitely determined. He was a kind of "go-between" from the old Augustinian to the new peripatetic psychology.[287] Instead

[283] Baumgartner, op. cit., p. 30ff.
[284] Baumgartner, op. cit., p. 18.
[285] Baumgartner, op. cit., p. 26; cf. Vallois, Guillaume d'Auvergne.
[286] De Wulf, op. cit., p. 273.
[287] Siebeck, Gesch. d. Psychol., I², p. 426.

of rejecting the old and boldly accepting the new, he tried to compromise and harmonize them, which was impossible. As a consequence, we notice a lack of sureness, of definiteness, "a characteristic lack of doctrinal cohesion."[288] This lack of system, lack of clearness in thought and style, accounts for the negligible influence of William of Auvergne on subsequent philosophy.

*THE FRANCISCAN SCHOOL.*—The Franciscan School of the thirteenth century shows a remarkable advance towards the unification and systematization of Scholastic philosophy. When, in 1209, St. Francis founded the Order of Friars Minor he had little thought of raising the intellectual standard of the age. But, as Felder remarks,[289] any religious community with an aim and a constitution like that of the Franciscans, will naturally develop the pursuit of science and culture. As a matter of fact, however, it happened "dass die wissenschaftliche Arbeit von Aussen hereingetragen, nicht im (Franziskaner) Orden erwachsen ist."[290] For, about 1231, Alexander of Hales, at that time the most illustrious professor at Paris, took the Franciscan habit, and it was he who gave the first impetus and pointed out the general direction to early Franciscan philosophy and theology.[291]

At that time the ecclesiastical prohibition or restriction concerning the works of Aristotle was practically disregarded, though not officially removed.[292] As a result, the new peripateticism based on Aristotle was becoming more and more prominent. Alexander was conservative. In theology St. Augustine, St. John Damascene, and Peter Lombard were his guides; in philosophy he inclined toward the new peripateticism, though his training had been along the lines of Augustinian thought.

[288] De Wulf, op. cit., p. 274.
[289] Studien im Franziskanerorden, p. 12.
[290] Endres, Alexander v. Hales, p. 31.
[291] Felder, op. cit., p. 177.
[292] Felder, op. cit., p. 179.

Hence, whenever possible, he attempts a compromise between the traditional Augustinian view and the new Aristotelianism. Of course, he does not treat of philosophy systematically, but merely as a help to theology; this may to some extent explain his inconsistency, favoring at one time the opinion of St. Augustine and at another time that of Aristotle, whichever is more advantageous for the desired conclusion. Whether we should say with Siebeck[293] that Alexander applied Avicenna's philosophy to all questions of theology, and when this did not satisfy, referred to St. Augustine, St. John Damascene, Boethius, and others; or whether we should not rather invert the order of precedence,—this may be an open question. So much, however, is clear: Alexander attempted a fusion of these two lines of thought; an attempt which, in psychology, at least, was necessarily disastrous.[294]

This general characterization applies with equal truth to the illustrious pupils of Alexander: John de la Rochelle and St. Bonaventure. Both these start where Alexander leaves off, the one in philosophy, the other in theology. That St. Bonaventure should develop the theology of his master seems in harmony with the spirit of the thirteenth century; but that John de la Rochelle, a professor of theology, should devote his "Summa de Anima" wholly to philosophy is rather surprising.

*ALEXANDER OF HALES.*—Alexander of Hales speaks of the union of soul and body as an "unio nativa . . . ad modum formae cum materia."[295] Soul and body become one "per compositionem quia unum illorum est possibile respectu alterius, non tantum ut mobile respectu motoris, sed ut materialis respectu suae perfectionis."[296] The soul is the "actus naturalis corporis completi in

[293] Arch. f. Gesch. d. Philos., Bd. II, p. 180.
[294] De Wulf, op. cit., p. 280.
[295] Sum. theol., II, q. 63, m. 1, res.
[296] II, q. 63, m. 7, ad 1.

forma naturali."[297] It is united to the body "ut motor mobili et ut perfectio formalis suo perfectibili."[298] The body, on the other hand, has the "potentia"[299] to be informed by the soul, and, indeed, needs the soul, "indiget anima."[300] When, therefore, Alexander compares the union of soul and body to that of a sailor in his ship,[301] he does not call in question the substantial union of the two, but he emphasizes another doctrine which he, and most Franciscans after him, borrow from Avicebron, namely, that the soul is not only the form of the body, but also an "ens in se praeter hoc quod est actus corporis; . . . est substantia praeter substantiam corporis."[302] Again, when Alexander speaks of *media* between soul and body, he postulates these, not for the union of soul and body as "perfectio perfectibili," but to mediate the interaction of the two.[303]

If the psychological doctrines expressed in the Summa of Alexander are on the whole elementary and incomplete, this is particularly true concerning the problem of sensation.[304] Imbued with the views of St. Augustine, he underrates the importance of sensation, considering it an inferior means of knowledge,[305] and, therefore, restricts his discussion of sensation to three questions: Is sensation one faculty? Are there five senses? How is their number determined? Even these are, in part, treated too briefly to be intelligible. Nor are his arguments always conclusive.[306] We can, however, deduce from his meager allusions that he considers soul and body as co-principles of sensation, and that, to his mind, the subject of sensation is affected by the object and is

[297] II, q. 63, m. 4, ad fin.
[298] II, q. 63, m. 1, res.
[299] II, q. 62, m. 6.
[300] II, q. 63, m. 1, res.
[301] II, q. 69, m. 2.
[302] II, q. 59, m. 2; cf. Endres, op. cit., p. 203.
[303] Endres, op. cit., p. 220.
[304] Endres, op. cit., p. 224; cf. Philos. Jahr., '15, p. 143.
[305] II, q. 69, m. 2.
[306] Cf. St. Thom., S. Theol., I, q. 78, a. 3.

partly passive.[307] He plainly expresses the necessity of an external medium[308] and of a "species in organo interiore et exteriore."[309] Whether he conceived of this species as a material accident, following herein the Arabians, or whether he accepted St. Augustine's view of the species, is best determined in the light of the explicit teaching of his pupil, John de la Rochelle.

*JOHN DE LA ROCHELLE.*—The starting-point of John's "Summa de Anima" is the psychology of Alexander. He does not slavishly follow his master; for instance, de la Rochelle denies that the soul is composed of matter and form,[310] which was affirmed by Alexander. But his theory of sensation differs from that of his teacher only in so far as John's is more complete, more explicit, and more didactic.

John de la Rochelle is the first of the medieval philosophers to say that body and soul are one substance: "Ex amina et corpore fit unum secundum substantiam, quod est homo."[311] It is the union of "forma suae materiae," of "perfectio suo perfectibili."[312] From this aspect, the union is immediate, "sine medio." Considering the body as an instrument or an organ of the soul, the psychical faculties or powers may be called *media* between soul and body.[313] Further intermediaries conditioning the interaction of soul and body, which are by nature most dissimilar, are the sensitive and vegetative nature, the spiritus, and the "natura elementaris."[314] The spiritus he defines as "vehiculum virium animae, et est corpus subtile, spirituale, diffusum in concavitatibus membrorum a natura quintae essentiae."[315]

[307] II, q. 66, m. 3.
[308] Ibid.
[309] II, q. 67, m. 4.
[310] Summa de Amina, Domenichelli's ed., p. 118.
[311] Op. cit., p. 170.
[312] Op. cit., p. 163.
[313] Ibid.
[314] Op. cit., p. 166.
[315] Op. cit., p. 167.

The sense, according to John, is that power of the soul "quae rerum corporearum percipit formas praesentes."[316] The soul has the power to receive "species spirituales intelligibiliter," and "similitudines corporales sensibiliter."[317] It is "receptiva omnium similitudinum et specierum."[318] The soul, then, is passive, since it receives, or is affected from without; "unde species animae dicuntur passiones."[319] In this, too, consists the faculty of knowing, because all knowledge takes place "per receptionem similitudinis."[320]

But the soul is not by itself the principle of sensation. "(Sensus) vires tam animae quam corporis dici possunt, quia ab anima in corpore fiunt, nec sine utroque fieri possunt."[321] All sensation "fiat per corpus."[322] It is, therefore, not correct to say: "Virtus visiva videt, vel pupilla videt;" we must say: "Oculus videt qui ex virtute visiva et pupilla constituitur."[323] The nerves, too, and the spiritus are required as means for sensation.[324]

Besides these internal media of sensation, an external medium is necessary. If the object and the sense-organ were in immediate contact, we could in some cases have no sensation at all, *e. g.,* in sight; and in no case could we have simultaneous perception of opposite qualities. "Necessarium ergo fuit medium in quolibet sensu."[325] The function of this external medium is to convey an image or a "species" of the object to the sense-organ. This is effected, says John, by the action of the medium: "Sensus enim visus recipit per actionem lucis speciem coloris;"[326] "per operationes lucis

[316] Op. cit., p. 227.
[317] Op. cit., p. 112.
[318] Op. cit., p. 132.
[319] Op. cit., p. 191.
[320] Op. cit., p. 152.
[321] Op. cit., p. 224.
[322] P. 253.
[323] Op. cit., p. 172.
[324] Op. cit., p. 256.
[325] Op. cit., p. 257.
[326] Op. cit., p. 293.

species coloris abstrahuntur quodammodo et pupillae copulantur.''[327]

The existence of the species is emphasized over and over in the ''Summa de Anima.'' ''Sensus enim fit per receptionem speciei vel similitudinis objecti non per receptionem ipsius secundum essentiam.''[328] This species abstracted by the action of the medium, is impressed upon the medium and thus conveyed to the sense. ''Medium immutatum immutat auditum.''[329] Color, odor, and the like are qualities ''quae inferunt passiones sensui.''[330] Precisely by these ''sensuum passiones'' the sense receives the forms of sensible things.[331] This description of the origin of sensation is plainly peripatetic; and still de la Rochelle presents St. Augustine's theory of vision without comment or criticism.[332]

But what is this species of which John de la Rochelle speaks so freely? This is precisely the point of our investigation. Hauréau says John's doctrine of the species is ''féconde en conséquences. . . . Or une de ces conséquences, la plus prochaine, est que toute perception est une réception, et que les sens ne recevant pas les objets euxmêmes, en recoivent les espèces, les images. Cette déclaration est donc la premier mot d'un faux système, si ce n'est pas le dernier.''[333]

We have seen that the Scholastics of the twelfth century accepted the Arabian interpretation of Aristotle's τύπος. We have again observed that the Scholastics of the early decades of the thirteen century were not noted for their originality. This might lead us to expect the same materialistic aspect of the species from de la Rochelle. And, indeed, we find many expressions in the ''De Anima'' of John, which seem to substantiate this

[327] Op. cit., p. 293.
[328] Op. cit., p. 293.
[329] Op. cit., p. 257.
[330] Op. cit., p. 255.
[331] Op. cit., p. 234.
[332] Op. cit., p. 224; cf. p. 253.
[333] Op. cit., I², p. 205.

view. For instance, we read: "In exteriore tamen sensu sunt accidentia rerum sensibilium;"[334] "oculus recipit formam materialem et situalem;"[335] the "aestimativa" is a "vis transcendens . . . quia apprehensio sua non est formarum sensibilium et materialium, sed immaterialium."[336] Moreover, the species changes the material medium: "Sonus . . . immutat aerem medium . . . imprimendo ei suam speciem;"[337] "caro calefacta medium sit in tactu ad sentiendum calorem."[338] All these expressions suggest a species in accordance with the Arabian concept of the species, that is, a material picture or miniature of the object in the sense-organ.

But contrary to the above expressions, we are informed: "Sensus exterior comprehendit speciem praesentem in materia et simplicem."[339] The species, then, exists, indeed, "in materia," but it is simple and, therefore, not material. Just as the "materia prima" has the aptitude of receiving all natural forms, so the soul has the aptitude of receiving all intelligible and sensible forms.[340] Hence the forms which enter the soul in sensation are not material; "aliter species et imagines sensibiles in ea facerent distantiam."[341] When, then, we read of material forms in the sense, we must interpret these expressions in the light of the following: "Licet sensus sit susceptivus specierum sensibilium praeter materiam, tamen ut in materia."[342]

According to the Arabians, the species is a quality of the object affecting the sense-organ. But de la Rochelle tells us the species arises in the sense *through* this affection of the organ: "Visibiles actualium formas, per

[334] Op. cit., p. 267.
[335] Op. cit., p. 117.
[336] Op. cit., p. 267.
[337] Op. cit., p. 255.
[338] Ibid.
[339] Op. cit., p. 231.
[340] Op. cit., p. 218.
[341] Op. cit., p. 166.
[342] Op. cit., p. 155.

sensuum passiones (mens) colligit.''[343] He admits with Avicenna that the external sense does not receive the form ''quae est in materia, sed ejus similitudinem vel ei simile.''[344] Surely the image is not more material than the object which it represents.

Again, his argument for an external medium is based on the contention that then we could not perceive opposite sense-qualities ''nisi alteratus (sensus).''[345] But a material species would in no way relieve the difficulty; we still should be unable to perceive opposite qualities without a change in the sense-organ.

Finally, John de la Rochelle, like all Scholastics, demands that in knowledge subject and object be in some way united. But he admits no emanation of forms nor innate ideas, at least not for our knowledge of the sensible world.[346] The object itself must, therefore, be somehow united to the sense. The object cannot be united to the sense *secundum essentiam.* Hence he must conceive of it as united *per speciem vel similitudinem.* According to John de la Rochelle, then, the species is the object itself in another mode of being, produced, indeed, by a material object, but not itself material, since it affects and exists in an immaterial sense. Once de la Rochelle uses the word ''tipos,'' but not with any specific meaning; he applies it to ''formas eorum quae (anima) opinata est et quae intellexerat.''[347]

The influence of Arabian philosophy appears in the attention given to the physical and physiological processes that accompany sensation. As Turner [348] and De Wulf[349] state, John exaggerates the importance of these factors; still, they are far less prominent in the ''Summa de Anima'' of de la Rochelle than in the works of the twelfth

[343] Op. cit., p. 234.
[344] Op. cit., p. 286.
[345] Op. cit., p. 257.
[346] Manser, Johann v. Rupella, Jahro. f. Ph. u. sp. Theol., 1912.
[347] Op. cit., p. 231, p. 329.
[348] Op. cit., p. 329.
[349] Op. cit., p. 281.

century. The psychical nature of sensation, on the other hand, appears prominently, so that we have here a theory of sensation which is typically psycho-physical. It fails in details, because of undue respect for authority, and by confusing Aristotle with his Arabian commentators. In spite of that, Bl. Albert the Great and St. Thomas added little more than clearness and precision to the species-theory as outlined by John de la Rochelle.

*ST. BONAVENTURE.*—St. Bonaventure, another Franciscan and pupil of Alexander of Hales, may be regarded as the last great exponent of early Scholasticism. He, too, is inclined to compromise, for, "he stands forth as a champion and promoter of tradition."[350] To quote his own words: "Non enim intendo novas opiniones adversare, sed communes et approbatas retexere. Nec quispiam aestimet quod novi scripti velim esse fabricator."[351] If, furthermore, we bear in mind that he treated of philosophy solely to substantiate his theology, and that purely speculative discussions had no charm for him, then we are prepared to hear that he did not develop the theory of the species sensibilis. In fact, the physiology and physics of sensation, which had received so much attention from John de la Rochelle and from other predecessors, were scarcely touched upon by St. Bonaventure. The union of soul and body, the spiritus, the external medium, the passive character of sensation,—all these doctrines he defended according to the manner of Alexander of Hales and John de la Rochelle.

St. Bonaventure, however, brings out more prominently the characteristic views of St. Augustine. Body and soul "in genere substantiae maxime distant;"[352] matter is "prope nihil."[353] The soul is the form of the body, but

[350] De Wulf, op. cit., p. 283.
[351] Praeloc., ad II Sent.
[352] Brevil., P. II, c. 10.
[353] II. d. 12, a. 1, p. I.

besides that, says St. Bonaventure, it is "hoc aliquid."[354] Then, too, we are told that knowledge is the "assimilatio cognoscentis ad cognoscibile,"[355] and this union is effected "secundum similitudinem quam anima abstrahit a re."[356] "Anima non cognoscit rem, nisi speciem ejus et formam sibi imprimat."[357] Hence there is in all knowledge a passive element, a reception.

In sensation there is always a passive and an active factor, a reception and a judgment. "Receptio est principaliter ratione organi, sed judicium ratione virtutis."[358] St. Bonaventure, therefore, states his view of the species sensibilis in these words: "Nullum enim sensibile movet potentiam cognitivam, nisi mediante similitudine, quae egreditur ab objecto, sicut proles a parente, et hoc generaliter, realiter, vel exemplariter est necesse in omni sensu. Illa autem similitudo non facit completionem in actu sentiendi, nisi uniatur cum organo et virtute; et cum unitur, nova fit perceptio, et per illam perceptionem fit reductio ad objectum mediante similitudine illa. Et licet non semper objectum sentiatur, semper tamen, quantum est de se, gignit similitudinem cum est in sua completione."[359]

It is evident from this passage that St. Bonaventure considers the species as absolutely necessary for sensation. What is the species? It is a likeness, a "similitudo" of the object, which proceeds from the object "sicut proles a parente." This comparison, "sicut proles a parente," might lead us to conclude that he considered the species to be material, since it proceeds from a material object. We are confirmed in this impression when we read that bodies "quae habent aliquid de natura humida, aliquid de aerea, etc."[360] enter the sense in sen-

[354] II. d. 17, a. l, p. 2.
[355] Ibid.
[356] Ibid.
[357] Ibid.
[358] II. d. 8, p. l, a. 3, q. 2.
[359] De Reduc. Art., n. 8.
[360] It. Men. in D., c. 2.

sation. However, that we must interpret the former as an analogy, and the latter as merely pointing out the special objects of the senses, appears from other expressions which state explicitly that the species is "non de materia"[361] and cannot be "sensibiliter separari ab objecto."[362] Nevertheless, though not material, the species is a true likeness or image produced by the object itself. "Objectum . . . gignit similitudinem," and this "similitudo" is "in medio genita."[363]

The function of the species is to move, or reduce to action, the knowing faculty; "movet potentiam cognitivam." But we saw above: "Anima . . . speciem ejus (rei) et formam sibi imprimat." Is, then, the soul the cause of the species, or does the object produce it? These apparent contradictions call to mind similar expressions in St. Augustine's works, and must evidently be interpreted in a similar manner, namely, the object is the material or passive cause, the soul is the efficient or active cause of the species. In that light St. Bonaventure can with equal right say that the object produces the form, or, that the soul informs itself.

Another result of the species is the union of object and subject: "Fit reductio ad objectum mediante similitudine illa." The species is not itself the object of sensation, the object known, but, "mediante similitudine," the external object is known. Here, again, we are reminded of St. Augustine: the species does not cause the object to be known, unless this be united to the organ and to the sense-faculty. The species is not sensation, but it is a necessary factor in sensation.

How is the union of the species with the sense brought about? St. Bonaventure tells us the species is "in medio genita et deinde ipsi organo impressa." But that it is conveyed by the action of the medium, as John de la

[361] In Haexaem., col. XI, 23.
[362] II. d. 8, p. 2, a. u., p. 3.
[363] It. Men. in D., c. 2.

Rochelle maintained, is not maintained by St. Bonaventure. He recognizes the difficulty of explaining how this takes place, in fact, he does not attempt to explain the *how:* "Et hoc est mirabile."[364] Still he maintained that an immaterial likeness of the sense-object *somehow must be* conveyed by the medium to the sense.

If John de la Rochelle was largely influenced by Arabian science and by the materialistic view of the species sensibilis, St. Bonaventure is influenced even more by the psychical aspect of St. Augustine. That alone accounts for the fact that Matthew of Aquasparta, a pupil of St. Bonaventure, accepted, *in globo,* St. Augustine's theory of sensation.[365]

In general it may be said that the early Franciscan school favored the new peripatetic philosophy, and consequently, also the psycho-physical aspect of the species sensibilis. But it seems they lacked the courage of their convictions, or else they were hampered by their devotion to tradition. They readily accepted the new philosophy when this did not entail the rejection of the old traditional views; but when the old and the new clashed, instead of accepting either outright, they attempted to compromise. As a result, their philosophy in general retains some of that looseness and indecision which characterized the philosophy of the early decades of the thirteenth century.

*THE EARLY DOMINICANS.*—The relation of the early Dominicians to the new Aristotelianism was quite different from that of the early Franciscans. At Paris the early Dominicans accepted the traditional Augustinian philosophy and theology throughout; at Oxford they even actively opposed the rising peripatetic philosophy.[366] But the great geniuses of the Order of Preachers, Bl.

[364] In Haexaem., col. XI, 23.
[365] Cf. De Wulf, op. cit., p. 291.
[366] De Wulf, op. cit., p. 296ff.

Albert the Great and St. Thomas Aquinas, overcame all opposition, and fixed upon their Order a philosophy which was more purely peripatetic than that of the Franciscan school.[367]

History has been unjust to Bl. Albert. The greatness of St. Thomas, his pupil, has, in a measure, dimmed the luster of the master. And yet, as Haneberg observes,[368] Scholastic philosophy has no representative in the Western world, whose knowledge is so comprehensive as that of the "Doctor Universalis." He was conversant with the Sacred Scriptures, with the writings of the Fathers, and with the tradional theology and philosophy; he surpassed his predecessors in the knowledge of ancient Greek philosophy; he was well enough versed in Arabian philosophy to distinguish it, at least in most cases, from Aristotle. Added to this, he possessed a thorough knowledge of the natural sciences of his day. He failed to weld this immense wealth of accumulated knowledge into one consistent whole. "Aristotelianism, Neo-Platonism, Augustinianism, a philosophy developing independently from within, and a dominant theology: all are to be seen in their separate original forms in Albert, even where the blending process has already commenced."[369] However, though we cannot speak of Albert's psychology as one system, neither can we speak of it as three or four distinct systems; he attempted a synthesis but succeeded only in part.[370]

St. Thomas continued this work of synthesis. He surpassed his teacher, not so much in diligence and learning, as in mental acumen, breadth of view, sequence of thought, and precision of expression.[371] Concerning sensation, the subject of our investigation, the views of Bl.

[367] Ibid.
[368] Erkenntnisslehre d. Ibn Sina u. Albertus, p. 191.
[369] De Wulf, op. cit., p. 302, note.
[370] De Wulf, op. cit., p. 302.
[371] Cf. Schneider, Die Psychol. Albertus d. Gr., p. 23.

Albert and St. Thomas are so nearly alike that we may well state them side by side.

*BL. ALBERT AND ST. THOMAS.*—There can be no doubt that the influence of Aristotle is predominant in the psychology of these two great Scholastics. Albert defends very clearly the substantial union of body and soul: "Anima est primus actus corporis physici potentia vitam habentis;"[372] "ex anima et corpore fit unum naturaliter et substantialiter;"[373] "substantiale decimus animae esse, quod sit actus corporis."[374] Hence in his commentary on the Sentences he rejects the theory of an internal medium uniting soul and body.[375]

Albert, however, looks upon the soul not only as the form of the body, but also as "motor corporis."[376] As "actus primus," it determines the "esse" of the body; as "actus secundus," "conducit ipsum ad operationem."[377] In this second aspect the soul is united to the body by media; that is, the interaction of soul and body is explained by media. Albert accepts two media in his "Summa Theologiae," on the authority of the "De Spiritu et Anima"; but he admits in the same context that we may accept four media, as did Alexander of Hales.[378] In the "Summa de Creaturis" he distinguishes between a "medium generale" and a "medium speciale." There he attempts a peripatetic explanation ot the doctrine of the medium, so that its Augustinian character is almost lost.[379]

Albert's indecision concerning the medium is accounted for by the absence of any definite view in Aris-

[372] De An., II, t. l, c. 5.
[373] S. Th., p. 2, t. 12, q. 69, m. 1.
[374] S. de Creat., p. 2, t. 1, p. 4.
[375] L. I, d. 8, a. 26.
[376] S. Th., p. 2, t. 12, q. 68, ad 5.
[377] S. de Creat., p. 2, t. 1, q. 2, a. 3.
[378] II. t. 13, q. 77, m. 2.
[379] Cf. Schneider, op. cit., p. 389.

totle's works regarding this doctrine. That Albert should waver with regard to a doctrine so fundamental shows the futility of his attempt to synthesize Aristotle and St. Augustine; at the same time, it shows that the traditional Augustinianism was losing ground and giving way before the new peripateticism.[381]

St. Thomas is in perfect accord with these views of Bl. Albert the Great. He, too, speaks of a two-fold aspect of the soul and of an internal medium. "Sicut corpus habet esse per animum, sicut per formam, ita et unitur animae immediate, inquantum anima est forma corporis. Sed inquantum est motor, nihil prohibet aliquid esse medium, prout una pars movetur ab anima, mediante alia."[382] Again we are told that warmth and moisture "cadunt media inter animam et corpus ut dispositiones."[383] The spiritus as medium between body and soul St. Thomas defines as "vapor tenuis diffusus per membra ad eorum motus;"[384] or again as "subtilissimi vapores, per quos diffunduntur virtutes animae in partes corporis."[385] The spiritus animalis, according to the Angelic Doctor, is "proximum instrumentum animae in operationibus quae per corpus exercentur."[386]

If by a medium between body and soul is meant that one part of the body is moved by means of another part, this is not at all opposed to peripatetic principles. That warmth and moisture are necessary conditions for the interaction of soul and body is suggested by Aristotle himself. Finally, the idea of a spiritus as an instrument or means for the interaction of soul and body seems to be due, not to any metaphysical misconception but rather to a deficient physiology, to a faulty understanding of the function and anatomy of the nerves.

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[381] Schneider, op. cit., p. 386.
[382] De An., II, l. 1.
[383] Q. u. de An., a. 16.
[384] Cg., IV, 23.
[385] I. Sent., 10, 1, 4, c.
[386] IV, Sent., 49, 3, 2, c.

St. Thomas contends that as the soul is the principle of all activity in the body, so "aliquae partes animae sunt actus aliquarum partium corporis."[387] Hence he says: "Potentia (sensitiva) . . . est quasi forma organi."[388] And from this it follows "quod sentire non sit actus animae tantum, sed conjuncti."[389] Bl. Albert expresses these same views in the comprehensive words: "organa (sensus) autem sunt animata."[390] This is one of the principles upon which the psycho-physical aspect of the species sensibilis is based: the organs of the sense are animated; and hence we cannot have a purely physical action of an object on the organ. Since the faculty of sense is "quasi forma"[391] of the organ, every impression upon the organ is at the same time physical and psychical, or, psycho-physical. This theory does away with the materialism of the Arabians as well as with the subjectivism of the Augustinians.

St. Thomas defines the faculty of sensation as "quaedam potentia passiva, quae nata est immutari ab exteriore sensibili."[392] What he means by a "potentia passiva," we learn from the following: "Potentia activa comparatur ad suum objectum ut ens in actu ad ens in potentia; potentia antem passiva comparatur ad suum objectum e converso ut ens in potentia ad ens in actu."[393] In other words, then, the sense is a faculty which must be stimulated from without, in order that it become active. The sense is not purely passive; it is active, though only after it has been aroused by an impression from without. The senses are called passive, according to St. Thomas, "quia per sensibilia objecta moventur et fiunt in actu."[394]

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[387] De An., II, l. 2.
[388] De An., II, l. 24.
[389] S. theol., I. q. 84, a. 6.
[390] De An., t. c. 3, 1.
[391] S. de Creat., p. 2, t. 1, q. 2, a. 5
[392] S. theol., I. q. 87, a. 3.
[393] S. theol., I. q. 79, a. 7, c.
[394] Verit., q. XVI, a. 1, ad 13.

Albert, too, insists upon the passive character of sensation and explains it in the same manner. Sensation is a "potentia passiva" which becomes actually sentient in the presence of a sensible object, "quod agit in ipso (sensu) formam suam, ut illam sentiat in actu."[395] The object is, so to say, the complement of the sensitive faculty without which the sense is not actually sentient. Of itself no more than "privatio et materia ad sensibilia,"[396] the sense becomes active when "completus per actum speciei sensitivae."[397]

But in a similar manner the sense is the complement of the object. The same stimulus which causes the sense to perceive, causes the object to be perceived. Unless the sense be aroused to actuality, the object is not actually perceived; in fact, a thing is not the actual object of sensation, except when the sense is aroused to perceive it.[398] Hence St. Thomas says: "Sensus in actu est sensibile in actu . . . quia ex utroque fit unum, sicut ex actu et potentia."[399] One and the same act makes both the object and the subject of sensation actual, but, as Albert says, "est (actus) sensibilis ut agentis, et sensitivi ut recipientis et patientis."[400]

The nature of this "passio," or of this change in the sense, is not, Albert contends, that of a physical change, "de contrario in contrarium;" it is a change "de privatione in habitum."[401] The sense is called a passive faculty, "non quod recipiat formam quae transmutat substantiam suam in substantiam secundum esse, sed potius transmutatur in speciem sensibilem secundum intentionem."[402] In these words, again, the view of the Arabians is rejected. They affirmed what Albert here denies;

[395] S. de Creat., p. 2, q. 34, a. 1.
[396] Op. cit., q. 33, a. 1.
[397] Op. cit., q. 34, a. 1.
[398] Ibid.
[399] S. theol., I. q. 55, a. 1.
[400] S. de Creat., p. 2, q. 34, a. 1.
[401] S. de Creat., p. 2, q. 21, a. 5.
[402] Op. cit., q. 34, a. 1.

namely, that sensation is a change "de contrario in contrarium," and that the sense receives a form which causes a physical and chemical change in the sense-organ.

St. Thomas formulates in this connection one of his comprehensive metaphysical principles: "Dicitur aliquis pati communiter ex hoc solo quod id quod est in potentia ad aliquid, recipit illud ad quod erat in potentia, absque hoc quod aliquid abjiciatur; secundum quem modum omne quod exit de potentia in actum potest dici pati, etiam cum perficitur."[403] When, therefore, St. Thomas speaks of the passive character of sensation, he does not mean that the sense suffers the loss of anything; on the contrary, he means to say that the sense is perfected by becoming actually what it already was potentially. Change in the ordinary meaning of the word, St. Thomas calls "immutatio naturalis," "secundum quod forma immutantis recipitur in immutato secundum esse naturale."[404] This, he tells us, takes place in all sensation except in sight. But this is not sufficient; otherwise any influence of one thing upon another would imply sensation. Besides the "immutatio naturalis," "the immutatio spiritualis," "secundum quod forma immutantis recipitur in immutato secundum esse spirituale,"[405] is necessary for sensation. Albert says: "Immutatio aeris non sufficit ad visum; sed oportet etiam species visibiles in oculum procedere ad actum secundum actum lucidi."[406]

If we ask why this "immutatio spiritualis" is necessary, St. Thomas tells us: "Oportet enim omne agens conjungi in quo immediate agit, et sua virtute illud contingere."[407] But in every act of knowledge the object acts upon the cognitive faculty; hence the object must in some way be united to the subject. "Cognitio omnis fit per hoc, quod cognitum est aliquo modo in cognoscente,

[403] S. theol., I. q. 79, a. 2.
[404] S. theol., I. q. 78, a. 3.
[405] Ibid.
[406] S. de Creat., p. 2, q. 22.
[407] S. theol., I. q. 8, a. 1.

scilicet secundum similitudinem. Nam cognoscens in actu est ipsum cognitum in actu."[408] Or, as Albert expresses the same thought: "Omne apprehendere est accipere formam apprehensi, non secundum esse quod habet in eo quod apprehenditur, sed secundum quod est intentio ipsius et species."[409] The reason for this is in the very nature of knowledge which is a perfection of the subject, and not of the object. St. Thomas says: "Cognitio non dicit effluxum a cognoscente in cognitum, sicut est in actionibus naturalibus, sed magis dicit existentiam cogniti in cognoscente."[410] If this be true of knowledge in general, then, too, it is true of sensation; for sensation is the source of all knowledge. St. Thomas affirms this in the words: "Scientiam a sensibilibus mens nostra accipit."[411]

The object of sensation must, therefore, be united to the sense in some manner, and by this union, reduce the sense to actuality. The object cannot be united to the sense, or be present in the sense, "secundum esse naturale," because the one is material and the other is immaterial. Hence the object must be in the sense "secundum esse spirituale." "Non enim fit visio in actu," we read in St. Thomas, "nisi per hoc quod res visa quadammodo est in vidente. Et in rebus quidem corporalibus apparet quod res visa non potest esse in vidente per suam essentiam, sed solum per suam similitudinem; sicut similitudo lapidis est in oculo, per quam fit visio in actu; non autem ipsa substantia lapidis."[412] In the words of Albert: "Omnis sensus est susceptivus specierum sine materia."[413]

What is this "esse spirituale," this species of the object? Listen to St. Thomas: "Illud quod est prin-

[408] De An., II, l. 12.
[409] De An., II, t. 3, c. 4.
[410] Verit., q. II, a. 5, as 15.
[411] Verit., q. X, a. 6.
[412] S. theol., I. q. 12, a. 2.
[413] S. de Creat., p. 2, q. 34, a. 2.

cipium essendi est etiam principium cognoscendi ex parte rei cognitae, quia per sua principia res cognoscibilis est, sed illud quo cognoscitur ex parte cognoscentis, est similitudo rei.''[414] ''Sicut res habet esse per propriam formam, ita virtus cognoscitiva habet cognoscere per similitudinem rei cognitae.''[415] Objectively, therefore, the species, according to St. Thomas, is the form of the object, which is the ''principium essendi;'' but subjectively, the species is an image or a likeness of the object. It is a vital or intentional similitude of the object in the sense which, by this very modification, passes from the potency to the act of knowledge. *Entitatively,* the species sensibilis is a vital modification of the knowing subject, of the sense, and nothing more; but *representatively,* it is the form of the object. Or, again, we may regard sensation as the terminus of a double principle, of which the species sensibilis is the formal determinative principle, ''determinant cognitionnel,''[416] giving the intonation, so to say, and the sense is the material principle or the natural substratum of the process of sensation.[417]

We may say, then, that the form of the object is in the sense, but not with the same mode of being as it is in the object. As St. Thomas expresses it: ''Forma sensibilis alio modo est in re quae est extra animam, et alio modo in sensu qui suscipit formas sensibilium absque materia. . . . Nam receptum est in recipiente per modum recipientis.''[418] Albert, too, informs us that the species is not the form of the object ''prout est in ipso sensibili . . . sed intentio ejus;'' however, ''signum facit de re et notitiam.'' The object exists, indeed, in its natural ''esse,'' in the medium of sensation and in the sense; but ''in objecto habet esse materiale; in sensu habet esse spirituale; in medio habet esse sensibile.''[419]

[414] Verit., q. II, a. 3, ad 8.
[415] Q. u. de An., a. 5 c.
[416] Mercier, Psychologie, I., p. 222.
[417] Lanna, Le Teoria della conoscenza, p. 46.
[418] S. theol., q. 84, a. 1.
[419] S. de Creat., p. 2, q. 34, a. 2.

The "esse spirituale" of the object is not "proprie imago vel forma (ejus), sed species imaginis vel formae."[420]

The species sensibilis, as Albert the Great and St. Thomas present it, is evidently not material. It is the "esse spirituale" of the object; its function is to effect a union between the material object and the immaterial sense. If, then, the species itself were material, the problem of uniting matter to spirit would still remain. Hence St. Thomas says: "Sensus est susceptivus specierum sine materia, sicut cera recipit signum annuli, sine ferro et auro."[421] Albert, too, is explicit when he treats of this. "Omni sensui convenit ipsum esse susceptivum sensibilium specierum, sine materia et esse materiale, materia tamen praesente."[422] These last words, "materia tamen praesente," suggest that the species, though not material, represents the material object. St. Thomas observes that the sense, indeed, receives the form of the object without the matter, "sed cum materialibus conditionibus;"[423] Albert says, "cum appendiciis materiae." Hence sensation implies the apprehension of an object "in individuo," *i. e.*, as it exists in nature with all the individuating conditions of matter.

The species sensibilis must be considered immaterial, because we learn from St. Thomas that the species receives, indeed, its representative nature from the material object, but its entitative nature from the soul. "Anima humana similitudines rerum, quibus cognoscit, accipit a rebus illo modo accipiendi, quo patiens accipit ab agente, quod non est intelligendum, quasi agens influxit in patiens eamdem numero speciem, quam habet in seipso, sed generat sui similem, educendo de potentia in actum, et per hunc modum dicitur species coloris deferri a corpore colorato ad visum."[424]

[420] Op. cit., q. 21, a. 3.
[421] De An., II, l. 24.
[422] De An., II, t. 4, c. 1.
[423] S. theol., I. q. 84, a. 2.
[424] Quodlib., VIII, q. 2, a. 3.

The species sensibilis, finally, is not the object of sensation, the object directly known; it is the "principium cognoscendi rem visivam," as Albert says.[425] But if the species is the principle of knowledge, or that by which an object is known, then it cannot itself be the object known. The immediate object is the "rem visivam"; the species is the means by which or in which the object, the "rem visivam," is known. In the words of St. Thomas: "Species visibilis non se habet ut quod videtur, sed ut quo videtur."[426] The species is a postulate of reason, of which the sense is not even aware: "Oculus videns rem per speciem, non videt ipsam speciem in eo apparentem."[427] Hence the species is the *principium quo cognoscendi* and not the *principium quod.*

How does the species sensibilis originate? How does the influence from the object, which causes the species to arise in the sense, come in contact with the sense? This Bl. Albert and Great and St. Thomas explain by the external medium of sensation. After discussing the nature of each medium and the nature of its action according to the science of his day, Albert tells us that the medium does not convey the "objectum sensibile" as it exists in the object; otherwise, color, for instance, would act in the medium, would *color* the medium. Hence the "sensibile" has a mode of being in the medium, different from its mode of being in the object: "In objecto enim habet esse materiale; . . . in medio vero sensibile,"[428] This he claims for the "objectum sensibile" of sight, which is in the medium only "in potentia . . . sicut in transitu et in via."[429] The "objectum sensibile" of hearing and of smell is, indeed, in the medium "ut in materia, in ipso est actu"; but it acts upon the sense, not "actione materiae, sed actione medii." The "sensibilia" of taste and

[425] S. de Creat., p. 2, q. 21, a. 5.
[426] De Spir. Creat., a. 9, ad 6.
[427] De Sens., l. 4.
[428] S. de Creat., p. 2, q. 34, a. 2.
[429] Ibid.

touch, which have no external medium, are "actu . . . et in objecto, et in medio, et in organo." These, then, receive their "esse spirituale" "per spiritum animalem attrahentem et deferentem intentiones ipsorum sensibilium ad cerebrum. . . . Per hoc patet, quod intentio calidi per spiritum attractivum animalem ab origine tactus non calefacit cerebrum."[430]

St. Thomas, likewise, contends that the "sensibile" is not in the medium as it is in the object. "Color est quidem in corpore colorato sicut qualitas completa in suo esse naturali; in medio autem incompleta secundum quoddam esse intentionale."[431] In fact, he maintains the "sensibile" is not impressed upon the medium, but so affects the medium that the latter will impress a species of the object upon the sense. "Dicendum est quod ab odorabili resolvi quidem potest fumalis evaporatio, quae tamen non pertingit usque ad terminum ubi odor percipitur, sed immutatur medium spiritualiter, ultra quam dicta evaporatio pertingere possit."[432] Here St. Thomas expresses clearly that the species sensibilis is something over and above the impression of physical qualities.

Concerning the medium of taste and touch, St. Thomas says: "Videtur se habere caro et lingua ad organum sensus tactus, sicut se habent aer et aqua ad organum visus."[433] The only difference between them, according to the Angelic Doctor, is that we perceive the objects of sight, hearing, and smell "per hoc quod movent medium et iterum medium movet nos"; and we perceive the objects of taste and touch "per medium extraneum, non quasi moti a medio extraneo, sed simul cum medio movemur a sensibili."[434]

Returning to Albert, we learn that the "objectum sensibile" is generated in the medium by the form of the

[430] Ibid.
[431] De Sens., l. 5.
[432] De An., II, l. 20.
[433] De An., II, l. 23.
[434] Ibid.

object. To ask how this is possible, is like asking "quid conferat luci lucere secundum actum."[435] The form of the object is a "virtus activa" which acts "sine aliquo motivo extrinseco"; "et sic omnis forma multiplicat intentionem suam."[436]

Neither can it be objected that a material form cannot produce this "esse" of the "sensibile," which is "multo spiritualius quam ipse aer sit."[437] The "objectum sensibile" is generated in the medium by the form of the object "eo quod est in potentia esse formalis et efficientis," and not "eo quod est in potentia esse materialis."[438] The degree of the spirituality of the "sensibile" in the medium differs, "quia spiritualius esse est coloris in medio quam soni; et iterum spiritualius esse est soni in medio quam odoris."[439] Albert proves this by referring us to the wind, which does not disturb color, but which disturbs sound and even removes odor.

The movement of the medium by which this "sensibile" is carried to the sense varies with the several senses. Color is brought to the eye by the motion of light in the transparent. But "motus lucis in diaphano subito est, et non in tempore." And yet Albert goes on to tell us "non est ibi proprie motus, nec alteratio, nec loci mutatio, sed generatio potius in omnibus partibus medii directe oppositis distantibus secundum proportionem secundum quam potest in immutabile visibile."[440] Sound is generated in the air immediately surrounding the object; this air then moves a further part of air, and so on, till sound is actually present in every part of the medium "usque ad auditum."[441] Odors are brought to the sense with air or water "evaporatione et permutatione."[442]

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[435] De An., II, t. 3, c. 6.
[436] Ibid.
[437] Ibid.
[438] De An., II, t. 3, c. 6.
[439] Ibid.
[440] S. de Creat., p. 2, q. 21, a. 4.
[441] Op. cit., q. 24, a. 5.
[442] Op. cit., q. 30.

But Albert told us above that the "sensibile" "in sensu habet esse spirituale tantum."[443] How is this effected? The "sensibile" acts directly upon the organ of sense; "organa autem sunt animata." The sense is affected only "actione medii," not "actione materiae." For instance, color does not affect the sense of sight, "nisi actu lucidi;"[444] the auditory nerve is affected "ex aere percutiente et sonante per hunc modum, . . . sed non de necessitate immutatur nisi secundum sonum, . . . quia sensus recipit sensibiles species sine materia."[445]

St. Thomas informs us that the species is received by the organ of sense. But the organ and faculty of sense are "idem subjecto."[446] Hence the sense "est cognoscitivus sensibilis sui objecti, cujus species fit in suo organo, inquantum est tale organum."[447] The manner in which the species is impressed upon the sense-organ varies. In touch and taste it takes place "per contactum;" in smell, "cum aliqua resolutione odorabili;" in hearing, "cum aliquo motu locali," and in sight, "absque immutatione sensibili, sed per solam immutationem spiritualem medii et organi."[448]

The sense is disposed to receive the species, according to Albert, "per spiritum animalem et calorem naturalem et harmoniam organi."[449] It is actually sentient "quando habet speciem sensibilem,"[450] because "ab intentionibus sensibilium quae sunt in medio moventur sensus."[451]

The sense-organ must be proportionate to the "sensibile" as this exists in the medium. Albert introduces

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[443] Op. cit., q. 34, a. 2.
[444] Op. cit., q. 21, a. 5.
[445] Op. cit., q. 24, a. 2.
[446] De An., II, l. 24.
[447] De An., III, l. 3.
[448] De An., III, l. 1.
[449] S. de Creat., p. 2, q. 24, a. 1.
[450] Ibid.
[451] De An., II, t. 3, c. 16.

a very complete anatomy of the various sense-organs and of the brain and nerves, all of which is largely teleological. He prefers the anatomy of the Arabians to that of Galen whenever they differ. Then, too, he informs us that the spiritus is important as a means of conveying the species from the sense-organ to the brain. This is particularly true with regard to taste and touch, which have no external medium.[452]

In the "De Anima" Albert rejects Democritus' theory of vision.[453] In the "De Sensu"[454] he rejects as ridiculous the theory of those who would call light the common active element in all sensation, analogous to the "intellectus agens" in intellection. But he speaks with more reserve about the theory of Plato and St. Augustine: "Sine praejudicio aut ego non intelligo eos, aut ipsi falsum dixerunt."[455] St. Thomas maintains the object of sensation is united to the sense "non per modum defluxionis, ut Democritus posuit, sed per quandam operationem."[456] The species, therefore, arises from the action of the object and not from its "esse," but the nature of this "operatio" St. Thomas does not determine.

It appears from this that Bl. Albert the Great and St. Thomas Aquinas bring out in bold relief the psychophysical aspect of the species sensibilis. In the earlier philosophers of the thirteenth century this view of the species was not so distinctly outlined. In fact, we have observed that Alfred of Sareshel inclined towards the materialistic view, whereas William of Auvergne seemed, at times, to favor the psychical view. Still we have classed these, too, with the philosophers who accepted the psycho-physical aspect, on the principle that the influence of Aristotelian psychology is the distinctive mark of this aspect. After all, Bl. Albert and St. Thomas

[452] Cf. Schneider, op. cit., p. 88.
[453] II, t. 3, c. 9.
[454] T. 3, c. 1.
[455] De An., II, t. 3, c. 6.
[456] S. theol., I. q. 84, a. 6.

owe their preeminence among the philosophers of the thirteenth century, not to the originality of their thoughts, nor to their constructive and creative powers, but to their powers of synthesis, of systematizing the philosophy of the Middle Ages. Thus, in the introductory chapter, it was observed that the Aristotelian εἶδος-theory is based on the several doctrines of matter and form, of the substantial union of body and soul, and of potency and act. Now William of Auvergne and John de la Rochelle accepted these fundamental doctrines as unreservedly as did Bl. Albert or St. Thomas. Where these differ from their predecessors is in the precise comprehension of those doctrines, or in the extent of their application: a difference in development and perfection, indeed, but not a difference of view. All admitted the substantial union of body and soul, but it was left to Bl. Albert and St. Thomas to apply this doctrine and draw the inference that, therefore, the organs of sense are animated. Again, the philosophers of the early thirteenth century insisted that the species sensibilis is immaterial, but they found difficulty in defending this, since they regarded the species as something outside of the sense, impressed upon the material medium by a material object. St. Thomas then explained that the species is not impressed upon the medium, but the medium is so affected by the object, as to impress upon the sense a species of the object; hence the species is *entitatively* a modification of the sense and has no existence apart from the sense. The passive nature of the sense, too, was conceded by some philosophers of the twelfth century; but St. Thomas was the first to define a passive faculty with accuracy and clearness, was first to point out that a passive faculty receives from without, not the object of its activity, but merely the stimulus to action.

Compared with the materialistic aspect of the species sensibilis, the psycho-physical presents a change of viewpoint, a difference of kind, and not of degree only. In

the former we saw a faulty concept of form which was the source of much confusion; there we saw the physical and physiological factors of sensation emphasized so unduly that the psychical factor was almost excluded; there, too, we saw the physical impression on the sense-organ looked upon as the direct object of the sense-faculty. But all that is foreign to the psycho-physical aspect. At the same time, the subjectivism, the pure speculation, which distinguished the psychical view, is avoided in the psycho-physical aspect of the species sensibilis as presented by the great Scholastics of the thirteenth century, which is, indeed, a return to the ever-famous εἶδος-theory of Aristotle.

## CONCLUSION.

The history of the theory of the species sensibilis from St. Augustine to St. Thomas is indicative of the development of Scholasticism during its formative period. Based on the idealism and subjectivism of St. Augustine, the Scholastics before the twelfth century developed dialectics and pure metaphysics. Thereupon, realizing the fruitlessness of their speculations, they welcomed the new learning of the Arabians, which was based on observation rather than on speculation, and which, consequently, favored materialism rather than idealism. But as in the history of all human thought extremes beget their opposites, so in this case. In the twelfth century the natural sciences and the human arts were fostered to the neglect of what is today called philosophy. In consequence thereof, scientific knowledge outdistanced metaphysics; facts and phenomena of nature were observed, but metaphysics could not explain them. Thus the stage was set for the entrance of a philosophy which would account for the ultimate causes of things of sense. At this psychological moment the works of Aristotle were introduced into the Western world. Thenceforward the development of Scholasticism consisted in the more and more perfect adjustment of all knowledge according to Aristotelian principles. This, of course, provoked the opposition of conservative minds, but the struggle resulted, as such a struggle could only result, in the final acceptance of Aristotle, modified in part by the traditional philosophy of Plato and by the individual thought of the great Scholastics of the thirteenth century.

We have observed an analogous development in the history of the species sensibilis. The psychical view of this theory, which was subjective and purely speculative, remained uppermost till the twelfth century. Then, with the introduction of Arabian philosophy, the materialistic

aspect came into prominence, and continued so, till, through the influence of Aristotelian psychology and metaphysics, it was superseded by the psycho-physical view.

That the Scholastic theory of the species sensibilis is primarily a metaphysical theory would, then, appear even from its parallel development with that of general metaphysics. But apart from this, we have seen that St. Augustine, and those who accepted his view, defended the species-theory solely on metaphysical principles, as a postulate of reason. Later on, indeed, the physical and physiological factors of sensation were emphasized almost to the exclusion of the psychical and metaphysical elements. When, however, the struggle between science and metaphysics, between observation and speculation, was adjusted by the Scholastics of the thirteenth century, then, again, the metaphysical character of the species-theory was brought into prominence. The physical and physiological phenomena that accompany the origin of the species were not neglected by the exponents of the psycho-physical aspect of the species; they were discussed, but only in so far as they served to explain the metaphysical principles of the species-theory.

We may, therefore, reject the physics and the physiology of the Scholastics, if this be necessary in the light of modern science. But as the metaphysics of sensation, the species sensibilis is neither superfluous nor ridiculous. For, as long as we admit that mind and matter are not identical, that our senses give us an objective knowledge of the external material world, and that all knowledge implies a union of some sort between the subject and the object of knowledge, so long, too, reason will demand some theory to explain the union between the external material object and the immaterial sense. As long as we admit that our senses are not purely active faculties, that our knowledge of the external world is not innate,

and that a stimulus from without causes our senses to act, so long, too, reason will demand some theory to explain the affection of an immaterial sense by a material object. This two-fold explanation is offered by the species-theory; it is precisely the function of the species sensibilis to unite object and sense, and to arouse the sense to activity.

Nevertheless, no element of the Scholastic theory of sensation has given rise to more criticism than the theory of the species sensibilis. Reid[457] and Hauréau[458] contend that this theory implies the representative view of sensation; in other words, that the Scholastics considered the species to be the direct and immediate object of sense-knowledge, from which we conclude indirectly to the external object. Siebeck maintains[459] that the Scholastics misunderstood the εἶδ -theory of Aristotle and, as a result, introduced into the species-theory some materialistic elements from Democritus' εἴδωλον-theory. This second objection to the species sensibilis has become so general, that Eisler restates it in his excellent "Philosophisches Wörterbuch." As was pointed out in Chapter II., both of these objections are well founded if applied to some defenders of the materialistic aspect of the species. There, too, it was shown that enthusiasm for Arabian philosophy is directly responsible for these erroneous views. But from Chapter III. it appears that those who brought Scholastic philosophy to its highest development, and who are recognized by everyone as the best representatives of this philosophy, reject in explicit terms the above-mentioned errors of earlier Scholastics. To say that St. Thomas, for instance, defended the species as the direct object of sensation, or that his theory of the species sensibilis is "halbmaterialistisch,"[460] is wholly

[457] Essays on the Intel. Faculties of Man, II, c. VIII.
[458] Op. cit., I, p. 272.
[459] Gesch. d. Psychol., I², p. 432.
[460] Siebeck, Gesch. d. Psychol., I², p. 433.

unwarranted; anyone who has seriously studied the thought and expression of the Scholastics must come to this conclusion.

To sum up, we may apply to the Scholastic theory of sensation, of which the species sensibilis is the most characteristic feature, the words which Siebeck applies to Aristotle's theory of sensation: "Das erkenntniss-theoretische Problem ist in derselben tiefer ergriffen, als es in der Regel heute auf diesem Gebiete geschieht. . . . So wenig auch für uns heute damit gesagt sein mag, der Act der Seele im Vorgange der Empfindung sei anzusehen als eine Ueberführung aus dem Zustande der Realpotenz in die Verwirklichung dessen was in dieser von Haus aus angelegt ist, oder, in der Empfindung übertrage sich die Form des Gegenstandes ohne die Materie in die Seele, . . . so sind wir doch, abgesehen von unserer genaueren Kenntniss der physiologischen Vorgänge, auch jetzt noch hinsichtlich des letzten Wesens der Empfindung nicht weitergekommen als zu der Antwort, die Empfindung sei nicht bloss ein receptives Erleiden des Eindruckes, sondern eine durch denselben bedingte Bethätigung der "Seele," durch welche die Empfindung als Bewusstseinsakt erst entstehe."[461]

[461] Gesch. d. Psychol., I², p. 39.

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## VITA.

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